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MONEY AND MONETARY SYSTEMS

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A SHORT TREATISE ON
MONEY AND MONETARY SYSTEMS

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PREFACE TO THE ENGLISH EDITION

THE AUTHOR has already dealt with the subject of money in a book entitled *La Monnaie et les Phénomènes monétaires contemporains* – 1st ed. 1924, 2nd ed. 1935 – the first edition of which was translated into English under the title of *Modern Monetary Systems*. The present book is not a new edition of the earlier one. It is constructed on an entirely different plan. There is less place in it for the author's personal researches, of which it gives only the synthesis and the conclusions; but it is more didactic. Instead of assuming that the reader is acquainted with the rudiments of monetary technique, notably the mechanism of the exchanges, it begins by explaining them. It describes next in broad outline the history of money, and ends by defining the theory of money as the author conceives of it.

The reader must not be misled by the method of exposition adopted. When in his previous works the author set out to study the great monetary phenomena which have been enacted through the years, he took care always to trace the facts before him back to the antecedent causes which could explain them. And it was not until this work was done that it was possible for him, by inverting the sequence of the exposition, that is to say, by following down the stream of history, to retrace the evolution of the phenomena, to explain the facts by their own unfolding. The second part of the book devoted to the history of money is therefore really the work of a theorist, and it already contains the seeds of the theory which is developed in the third part.

It is true that the theory of money which is presented here has been elaborated very largely by the method of observation; in other words, with the help of historical research. The author first endeavoured to form an exact idea, taking account not only of legislation but of factual circumstances, of the nature of the currency systems whose combined working he wished to study. He then attempted to define clearly the phenomena which were to be explained. He tried to picture, in its historical and geographical setting, the action of the persons whose activities – operations on the exchange markets, etc. – had engendered the phenomena – variations of the exchange relationships between different currencies, etc. Mindful of their psychology and of the institutions which had helped to determine their action, he devised hypothetical explanations – for instance, about the functioning of bimetallism – which he afterwards verified by further historical research. After which, to round off the elaboration of the theory, he set aside circumstances of time and place and only concerned himself with the abstract conditions to which they may have corresponded.

The author is convinced that, wherever it is possible to employ it, this method, in which deductive reasoning does, of course, continue to play a large part, but in which the theory is developed slowly by gradual syntheses from a close observation of the facts, gives more certain and exact results than the method which consists in drawing lengthy deductions based on over-summary observation of the facts: the economist is never too well-informed about the reality he has to explain!

Although this book is conceived as a work on money as a whole, its title, *A Short Treatise on Money and Monetary Systems*, indicates that the author has been mainly concerned to study monetary phenomena as they result from the functioning of monetary systems, or, to be more exact, from the simultaneous functioning of different monetary systems which react on one another. There is no detailed study to be found here, for instance, of the problems of credit, or of monetary problems considered in the context of the economy as a whole. The book only deals with strictly monetary phenomena and problems. The conception of the subject is therefore narrower than the customary British one. The author trusts, however, that the reader will agree that the subject, circumscribed as it is, is worth the handling.

Paris, 1948.

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PART I

MONETARY TECHNIQUE

Chapter I

MONEY

§1. Money defined by its functions

If we were to go up to the first man we met and ask him what money is, his answer, supposing he had never read any books about money, would probably be: 'Money is something I get in payment for what I sell and which I use to pay for what I buy.' And he would no doubt be quite ready to agree that this something may not be directly useful in itself, seeing that it is *accepted not for its own sake, but in order to be exchanged again for whatever its possessor may be needing.*

If, on the other hand, our man in the street has read some classic on money and has a reasonably good memory, he will automatically reply: 'Money is a *commodity* which serves as an intermediary in exchanges and as a common measure of value.'

Are we, then, to include in our concept of money this idea that it is a commodity, an article, that is, which has a use-value of its own apart from its intrinsic function as a medium of exchange?

To reply at once to this question would be tantamount to making a pronouncement here and now on the intrinsic nature of money. And if we are to be properly equipped to do this, we should perhaps do well to wait until we come to the end of the book. At this preliminary stage, therefore, we will confine ourselves to defining money according to its functions, and to setting out without any sort of theoretical bias the various forms in which it may present itself to our notice.

Whether it is or is not necessarily a commodity, money, it would appear, features in history[1] as a commodity, but one which can be distinguished from other commodities by a clearly defined economic criterion: we accept it even if we do not need it, because we know we can exchange it subsequently for another commodity or service which we do need. Thus, in an economy which is still sufficiently primitive, an individual accepts one or more sheep in exchange for some other product; he accepts them even though he may not be needing any sheep at the time, because he reflects that he can use them later on to enable him to procure other things. If this state of mind becomes general, no one will make any difficulty about accepting sheep as payment. The sheep, though it is still a commodity, will cease to be an ordinary commodity; it will now be a commodity which, because it is accepted for the most part not for its own sake but with a view to a fresh exchange, acts as a habitual intermediary in exchanges, or in other words as a *medium of exchange.*

---

[1] Man would not seem, indeed, to have been capable of 'inventing' money, that is to say of creating *a priori* an agreed medium of exchange, but a custom grew up, becoming more and more deeply rooted as time went on, of making use of certain commodities for this purpose. It is true that the existence of money which has been considered to be purely representative, such as the fragments of leather used by our ancestors or the stones and shells of primitive tribes, has been adduced to disprove this argument. But we shall see that leather money was fiduciary money related, at least in the beginning, to commodities. As for the stones and shells which serve as money amongst certain primitive tribes, these have their own uses as objects of adornment or worship, and their extraction and transport involve a certain amount of labour, which may even be performed under the supervision of the authorities. As regards this point, see ALFRED MAHIEU, *Numismatique du Congo, 1485-1925*, and also an article entitled *Papiergeld* by MELCHIOR PALYI in the fourth edition of the *Handwörterbuch der Staatswissenschaften.*

The example of the sheep is, moreover, not selected at random. The sheep has actually taken the place of money. The derivation of the adjective 'pecuniary' from the Latin *pecus*, a herd, bears witness to this. Various objects of everyday use have filled the same function.[1] However, general preference has ultimately been given to a very small number of such objects, and particularly to precious metals.

This function of money as an *intermediary in exchanges* is of very great importance from an economic point of view – so great, indeed, that without it the economic evolution of the human race would be little short of inconceivable. A man who has a horse to dispose of wants a plough. But will he be able to find exactly the right partner to the bargain, in the shape of a man who has a plough to dispose of and who happens to be needing a horse? And supposing he is fortunate enough to find such a one, will they be able to agree that the value of the horse is equal to the value of the plough? If they cannot, will they agree on some other commodity to make up the difference between the value of the horse and that of the plough?[2] So long as no object exists which is accepted by mutual consent as a medium of exchange, the possibility of exchange is very small.[1]

---

[1] In the remote ages, apart from sheep and oxen, it was chiefly the various metals which were used as money. When Europeans first settled in the new countries they were short of metallic money, and employed various objects of current use and of a certain durability as money – lead pellets in Massachusetts, tobacco in Virginia, beaver skins in Canada, and cod in Newfoundland. Tea is still used as money in Tibet, and salt and millet in Africa. On the other hand, in a large part of Africa and Asia an object was in circulation as money amongst the native population which apart from its monetary function does not appear to have served any purpose except that of adornment. This was the *cowrie*, a sort of white shell found in the Sunda Islands. The same thing occurred in North America, where the *wampum*, an ornament made of two shells joined together, was used as money by the Red Indians. The chief works which deal with this subject are BABELON, *Les Origines de la Monnaie*, SCHURTZ, *Grundriss einer Entstehungsgeschichte des Geldes*, and NORMAN ANGELL, *The Story of Money.*

[2] A. DE FOVILLE, in his excellent little book on *Money*, gives a curious example borrowed from antiquity to show what a complicated operation an exchange in kind can be where the two parties attempt to equalize the value of the commodities exchanged. 'We see', he writes, 'an Egyptian of the time of the Ramassides bartering a bull for a mat, five measures of honey, eleven measures of oil and seven other miscellaneous articles.'

Other functions, which are also very important ones from an economic point of view, derive from this primary function of money as a medium of exchange.

Firstly, it is a *common measure of value.* For once it has become the generally accepted custom to exchange all commodities or services supplied against one and the same object – let us assume it, at this stage, to be one single commodity – with a view to subsequently exchanging the commodity which figures as the intermediary for other commodities or services, *all the exchange ratios between all the other commodities and services and this one commodity are immediately established.*

It is consequently by reference to this standard commodity that all the exchange values are fixed. An ox, say, can be exchanged for six sheep, a plough for five sheep, a sack of corn for two, and so forth. An exchange ratio will consequently be set up between one unit of each of these commodities and a definite number of sheep. In other words, the price of each commodity or each service will henceforth be expressed in terms of sheep. The sheep, which will have become a *monetary unit,* will be the *common measure* of all the units of commodities or services.[2]

Even when the money is only accepted for the purpose of effecting some subsequent purchase, so that the first exchange in which it has been accepted gives rise to another one in which it will be handed over, the first exchange constitutes a complete transaction in itself. The person who has received money may be considered to have been satisfied. He has been *paid,* for he is now the possessor of *purchasing power* deemed to be equal in value to what he has supplied. We must therefore bear in mind that money, the medium of exchange, is also a *means of payment.* Though this is often taken for granted, it is well to note it, for money may cease to be a current medium of exchange and measure of value and still remain a means of payment.[3]

[1] *Strictly speaking, there can be no market so long as there is no money.* There can certainly be an exchange of corn for wine, or corn for maize, but if there is to be a general supply and demand in corn, maize or wine, the whole of the supply and demand in each of these commodities must be concentrated, which will happen when there is a demand for each of them by possessors of money. It will matter little then whether the money bid for the wine, for instance, originated in a prior sale of corn or maize; there will be one single wine market.

[2] The existence of money, besides being an indispensable prerequisite for the constitution of a single market for each commodity, is also the essential condition for the formation of an equilibrium price on such a market. (See BERTRAND NOGARO, *Principes de Théorie Economique,* p. 168.)

[3] Thus, since September 1931 the sovereign has ceased to be the medium of exchange and the measure of value in Great Britain, although gold specie continues to be used as a means of external payments. We shall see later on, moreover, that money of contract and money of payment were often distinct under the *ancien régime,* and that they have occasionally become so again in our own times for purposes of international payments.

Furthermore, the person who has received the money may not wish to expend it on a new exchange for some time. He may wish to protract his enjoyment of it by keeping the purchasing power which it represents. This is the case with the miser, who finds a keener satisfaction in patting a well-lined pocket than in the pleasures which his money might procure. The same is true of the saver, the person who wishes to provide against the hazards of life. Here, because it can be retained for any length of time before being put back into circulation, the means of exchange and payment is also a *means of saving.*

Moreover, a sum of money representing *available purchasing power* is not necessarily retained only by its owner. The owner may place it in the safe custody of a third person. He may also lend it to another person who binds himself to return it at a later date. A sum of money may also be the object of a clause *in other fixed-term contracts*: in a fixed-term sale, for example, the amount due is fixed at the time the contract is made, but it only becomes payable after a certain length of time.

In whatever way the *time factor* is introduced, it combines with the measure-of-value function to make money a *store of value*, and this new function gives rise to fresh economic problems. For the prices of the various commodities and services expressed in monetary units vary over time, and a given sum of money is liable to gain or lose in value or, to put it more accurately. to represent *purchasing power which varies over a period.*

In short, the essential attribute of money is that *it is accepted not for its own sake, but with a view to its subsequent exchange*. It is consequently an *intermediary in exchanges*, and it is from this *primary* function that the others are derived. It is because it is the customary intermediary in exchanges that it has become the *common measure of value*. And because of the knowledge that it can subsequently be exchanged for any other commodity, it confers on its owner a *general purchasing power*, and people consider they have been paid when they have received it – whence its function as a *medium of payment.*[1] And it is because it is at once a medium of exchange and payment and a standard measure of value that it becomes a *means of saving* and, in a more general sense, a *store of value.*

[1] VON MISES, in his *Theorie des Geldes und der Umlaufsmittel*, dismisses the idea of money as a means of payment as representing a juridical conception and not an economic one; for, he remarks, the exchange is not completed until the money received has been paid out again. This statement is true as far as it goes. It is possible to argue that money, or even commodities, are in themselves – that is, inasmuch as they are not in request as commodities – merely a title to credit in respect of commodities or services. Money may, however, be retained for a long time in the form of available purchasing power, and even in this capacity it may be transferred to someone else who pays money for it (loan transactions). The exchange of commodities or services for money, therefore, forms one integral transaction, which can be complete in itself in the eyes of both the economist and the jurist. And we have seen, too, that money as a means of payment may be dissociated from money of account.

We can define money, then, by its functions, all of which derive from the first. Money represents:

(1) a medium of exchange;
(2) a standard measure of value;
(3) available purchasing power and a means of payment;
(4) a means of saving and a store of value.

§2. The various forms of money

The fact that money is not accepted for its own sake, but with a view to its subsequent exchange, might seem to indicate that its usefulness to the individual is limited to that which results from its social value as a means of exchange. This would make it appear *conceivable* for money not to be a commodity. On the other hand, we shall find that monetary media do at present exist which are not commodities. But neither the logical deduction nor the factual evidence provide any adequate solution of the problem.

For the fact that it is possible to conceive of money as other than a commodity – the fact, that is, that such a concept does not imply any inherent contradiction – does not mean that the concept corresponds to any reality. And the factual evidence that non-commodity money does exist does not in itself prove that such money can be self-sufficing, that it can have an absolutely autonomous existence. Thus, without prejudice to any theoretical conclusions which may emerge in due course, we shall confine ourselves to recording here that *monetary media exist which are not in the nature of commodities.* For instance, side by side with gold coins such as the English sovereign, which is worth £1, there are *notes* representing a specified number of pounds.

Bank-notes bearing these denominations did for a long time actually represent sterling, inasmuch as the holder was entitled to exchange them at the institution which had issued them for the stated number of pounds, in gold. But on several occasions they have ceased to be convertible into gold, and this did not prevent them from continuing to circulate or from being accepted in transactions for the number of pounds indicated on each note.

The British Treasury has even issued notes, also for a specified number of pounds, which never represented anything but abstract monetary units, being from the outset inconvertible into metal; such were the *Treasury notes* issued in 1914.

Notes which are *inconvertible into metal* are *real*, or in other words material, tangible money, but they are purely *fiduciary money*;[1] they are '*monnaie de confiance*', which is accepted in virtue of the *purchasing power* which it represents; for the holder is confident that when he has

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[1] People used to talk about 'money signs'.

Furthermore, the person who has received the money may not wish to expend it on a new exchange for some time. He may wish to protract his enjoyment of it by keeping the purchasing power which it represents. This is the case with the miser, who finds a keener satisfaction in patting a well-lined pocket than in the pleasures which his money might procure. The same is true of the saver, the person who wishes to provide against the hazards of life. Here, because it can be retained for any length of time before being put back into circulation, the means of exchange and payment is also a *means of saving.*

Moreover, a sum of money representing *available purchasing power* is not necessarily retained only by its owner. The owner may place it in the safe custody of a third person. He may also lend it to another person who binds himself to return it at a later date. A sum of money may also be the object of a clause *in other fixed-term contracts*: in a fixed-term sale, for example, the amount due is fixed at the time the contract is made, but it only becomes payable after a certain length of time.

In whatever way the *time factor* is introduced, it combines with the measure-of-value function to make money a *store of value*, and this new function gives rise to fresh economic problems. For the prices of the various commodities and services expressed in monetary units vary over time, and a given sum of money is liable to gain or lose in value or, to put it more accurately, to represent *purchasing power which varies over a period.*

In short, the essential attribute of money is that *it is accepted not for its own sake, but with a view to its subsequent exchange.* It is consequently an *intermediary in exchanges*, and it is from this *primary* function that the others are derived. It is because it is the customary intermediary in exchanges that it has become the *common measure of value.* And because of the knowledge that it can subsequently be exchanged for any other commodity, it confers on its owner a *general purchasing power,* and people consider they have been paid when they have received it – whence its function as a *medium of payment.*[1] And it is because it is at once a medium of exchange and payment and a standard measure of value that it becomes a *means of saving* and, in a more general sense, a *store of value.*

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[1] People used to talk about 'money signs'.

But there is more to it than that. The function of monetary medium may be performed not only by real fiduciary money, but by *immaterial, abstract* money.

Let us suppose that every member of a particular community possesses an account on a ledger which shows the amount standing to his credit at any given moment. For any commodity which he sells an amount equal to the proceeds of the sale is added to his account and deducted from the account of his debtor. Subsequently, all he has to do to pay for a commodity which he purchases is to take the amount which he owes from his own account and have it placed to the account of his creditor. It is clear that by this machinery monetary settlements can be effected indefinitely by *transfers* from one account to another without any real money being created or changing hands. On this theory, one's money really consists of an aggregate of monetary units entered in a ledger, and *the transfer of this sum from one account to another is equivalent to taking a note from one cash-box and putting it into another one.*

This *abstract money* is usually known nowadays in the language of economics as *bank money.*

It would thus appear that in our own times money takes three different forms:

Commodity money, which is in fact *metallic* money, generally consisting of gold or silver coins each corresponding to a certain number of monetary units.

Fiduciary money, which consists primarily of *paper notes* having no appreciable commodity value, each of which also represents a certain number of monetary units.

Bank money, which is impalpable, abstract money consisting of *sums of monetary units* entered in ledgers which *pass from one account to another.*

In any of these three forms money is in the first place a medium of exchange. The supplier of commodities or services receives a certain number of monetary units; afterwards, in order to obtain some other commodity or service, he will also hand over a certain number of monetary units. *However this is done, the original barter is interrupted and divided into two distinct operations.*

Money, then, whatever form it may assume, functions in the first place as a medium of exchange and payment. It is from this primary function that it derives its function as a measure of value. Once any goods or services are exchanged for a certain number of monetary units it is the number of monetary units which each one represents which measures its exchange value in relation to the others. Finally, once a sum of money represented by a note or by an entry in a ledger can be retained, like metallic money, it also acts as a means of saving or a store of value.

Fiduciary money or bank money may not in themselves be capable of performing this latter function as satisfactorily as metallic money. For, as we have seen, the store-of-value function presupposes that money shall retain its purchasing power indefinitely, which is never entirely true, and in some cases it may cease to be true at all.

We shall therefore refrain for the present from expressing an opinion on the delicate question of whether a non-metallic monetary medium can of itself, without the support of metallic money, adequately perform all the functions of money. We shall confine ourselves to bearing these facts in mind: money, which first appeared in the form of a commodity, subsequently also assumed the form of real fiduciary money and even of intangible or bank money; in one or another of these forms it performs its primary function of a medium of exchange, and from this function it derives – with what degree of efficiency we shall have to decide at a later stage – all of its other functions.

Having completed our general survey we shall now proceed to study in turn each of the three categories of monetary media.

§3. Commodity money and metallic money

As already stated, there is a type of commodity which time has shown *to be particularly well fitted to perform the office of money:* these are the precious metals, gold and silver. An ingot of gold or silver of a certain weight is, in fact, by virtue of its actual physical properties, a commodity which lends itself particularly well to the role of medium of exchange. Indeed, if a well-defined exchange relationship is to be established between one commodity and other commodities, it is essential that the commodity itself shall be clearly definable. Now, in their pure state gold and silver are *simple substances*, and consequently *preserve their identity indefinitely*, and even their alloys may be perfectly *homogeneous*. For this very reason they are easily *divisible*. They are, moreover, rustless, and very *durable*. They can certainly be worn down slightly by friction: this is known technically as *wear*. But this disadvantage can be overcome to a certain extent by *alloying* them with copper, and in any case the prospect of its being completely eliminated by using any other material would be very remote.

The money metals also possess other properties, as a result of which metal money has been brought to a very high degree of perfection. Thus, though they are strong, they are very *malleable*; it is this quality of malleability which makes it possible to shape ingots into small disks bearing an impress showing directly or indirectly their *weight* and *content*.

The names themselves of the coins struck originally indicated their weight; the 'pound' is a case in point. The minted coin was subsequently given separate denominations – écu, for example; but as the right to coin money was generally the prerogative of the supreme authority, a gold or silver coin bearing a certain name corresponded to a weight of fine metal fixed by law. We shall see further on that the custom which arose of giving a monetary unit a name unconnected with its weight of metal was not without effect on the evolution of money. But it is nevertheless true that *a minted coin corresponds to a certain weight of fine metal fixed by law.*

If *every ingot*, whether gold or silver, can be *transformed ad libitum* into money and vice versa, there is nothing to distinguish the minted coin containing a stated weight of metal from the metal commodity, and *metal money* under its aspect of *coined money* continues to be essentially *commodity money.* As we shall see, this is exactly what happens under the modern system of *free coinage*, which enables any private person to hand in to the mint an ingot made of at least one of the money metals and have it minted and returned to him in the form of coin.

If, on the contrary, the minting authority only buys for coinage purposes the quantity of metal which it thinks fit, metal money ceases to be indistinguishable from a corresponding weight of the metal commodity. If the metal is quoted on the market at a price which is in excess of the number of monetary units mentioned on the coin, the latter is withdrawn from circulation, melted down – generally in the face of legal prohibition – and sold as bullion. If the reverse happens, the metal, since it cannot be transformed into coin at the bidding of private persons, may be quoted at a price which is considerably less than the number of monetary units shown on a coin containing the same weight of fine metal. In this case the metallic money ceases to be wholly commodity money and becomes money which is *partly fiduciary.*

We shall see later that this has been the case with silver coins in many countries in our own generation. And it should be added that it is the normal fate of token coins made of various non-precious metals such as nickel, copper, etc.

§4. Fiduciary money and paper money

Whereas commodity money generally presents itself to our notice in the form of gold or silver metallic coin, fiduciary money – wholly fiduciary money – generally takes the form of paper notes.[1]

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[1] *Copper* coins of a fiduciary character existed in Russia, however, in the seventeenth century. Certain Colonial *cash bonds* made of metal counters are also worthy of mention in this connexion. Card money was once used in the French Colonies: this was made of playing-cards cut into four pieces, with a seal and a specified number of livres, sous or deniers superimposed upon them. See below, Part II, Chap. IV, also

A distinction should be made, however, between *notes which are convertible into metallic specie and paper money.*

Notes which are convertible into metallic specie are generally issued by a *bank* – which enjoys a privilege to this effect – for the purpose of its credit operations. When its clients hand in bills to be discounted the bank of issue usually tenders the greater part of the sum borrowed in the form of notes. These notes are redeemable at sight in cash. People who receive them over the counter of a bank can therefore demand their immediate redemption. But in practice they prefer this light and handy medium to carrying large sums of money. For this very practical reason, notes play a greater part in outgoing than in incoming cash movements at the banks. And it is by means of this extremely simple mechanism that the cash reserves of the banks are built up, whilst the notes pass into circulation.

On the other hand, though the banks are bound to supply anyone who hands in a note with an equal number of monetary units in cash, they know that immediate and full repayment of all the notes issued will not be required of them. *They can therefore issue notes to an amount appreciably higher than the total of their cash reserves.* Hence, although ordinary bank-notes which are convertible at sight into cash are not, in principle, money, the notes issued do nevertheless constitute a *supplementary monetary reserve in so far as their amount exceeds that of the metallic reserve*; this is what is known as the uncovered circulation. This state of affairs has, moreover, been gradually regularized by the law, which has made bank-notes *legal tender*; that is, the law has recognized them as a medium of payment in transactions between private individuals, each of whom is obliged to accept them as money from other private individuals, with the proviso that he is entitled, if he wishes, to demand their subsequent redemption in metallic specie by the issuing institution.

Finally, when the bank of issue is relieved by the passing of emergency legislation from the necessity of effecting repayment in cash, the bank-note becomes an autonomous monetary medium; it is then, at least temporarily, *paper money*, and the *total* of the notes issued then constitutes a separate element – very often the principal one – in the *stock of money.*

Thus *paper money* frequently originates in bank-notes; this happens

BERTRAND NOGARO, *Le Régime monétaire des Colonies françaises* (Chap. 16 of the *Traité du Droit colonial,* by P. DARESTE). See also ZAY, *Histoire monétaire des Colonies françaises.* Further instances of money of a fiduciary character made of the skins of animals are recorded, notably in the remote ages amongst the Carthaginians, and in the central period of the Middle Ages in Europe, notably in Russia, whose circulation included fur cuttings – such as the noses of squirrels – which originally constituted a title to the entire fur, thus constituting convertible fiduciary money. In this connexion, see the article entitled *Papiergeld,* by LEXIS, in the third edition of the *Hdw. der Staatsw.* See also BABELON, op. cit., and SCHULTZ, op. cit.

whenever exceptional circumstances – principally wars – compel the authorities to make bank-notes a forced-tender currency.

Paper money can, however, come into being in other ways.

The State can declare notes which it has itself issued on another basis to be a forced currency. It can, for instance, enact that *Treasury bonds shall cease to bear interest* and are to be accepted as payment at their nominal value by public and private banking institutions. It can also enact that notes issued by the Treasury authority which bear no interest but are redeemable at sight in cash, such as bank-notes, *shall cease to be redeemable. It can also issue directly*, to pay for public expenditure, *notes which bear no interest and are not convertible into cash.*[1]

Paper money, whatever its origin, is an autonomous monetary medium. It is money, *real money*, but it is without commodity value; hence it is *fiduciary money*.

Two things, however, should be observed in this connexion. Firstly, the fact that it is an autonomous monetary medium does not prevent it, as we shall see at a later stage, from forming part of *a complex monetary system, the various elements of which react on one another*. Secondly, the fact that it is in principle not convertible into metal does not necessarily exclude the possibility of a mechanism whereby *the domestic monetary unit becomes convertible into foreign monetary units.*[2]

We will consider later[3] in what conditions a paper currency, or, in a more general sense, a fiduciary currency, can properly discharge all the functions of money. We will confine ourselves for the present to saying that if it is to act as a medium of exchange and payment, an object which is not a commodity must from the outset fulfil one essential condition: *it must not be possible for those who use it to create it.* Where it is a question of commodity money, which is an article of production – that is, one which not only has a use of its own, but which has been produced by labour – there may indeed be no major objection to its being created by the persons who tender it as payment: in this case the role of the public authority is a secondary one. But when it is a question of monetary instruments the cost of whose production is very much less than their legal value, or even practically nil, it is obvious that *private individuals cannot be authorized to create them for their own profit*. The reason why paper notes have been universally adopted as fiduciary money is because it is possible to print them in such a way and on paper of such a quality that it is very difficult for private persons to imitate them. Very severe penalties, moreover, attach to the counterfeiting of notes.[1]

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[1] These three expedients were employed by the United States Government during the Civil War. The notes which fall into the last-named category – which were the most numerous – are known as *greenbacks*.

[2] See below, Part I, Chap. II, §3, and Chap. III, §5.

[3] See Part III, *Theory of Money*, Chap. III.

§5. Immaterial or bank money

In order to realize from the outset the scope and functions of intangible or bank money, let us imagine a community in which the pecuniary assets of each member are entered in a ledger. In this hypothetical case *the monetary reserve of the community would consist of the total of the abstract sums of money shown in the ledger at a given moment*, and all payments due by one physical or moral entity to another would be effected by transferring the amounts from the account of the former to the account of the latter. It is true that no country exists in which all the assets of private persons or bodies are entered in a ledger of this kind, and where all payments are effected by book entries. It is also easy to see that for practical reasons it would not be convenient to effect all payments by transfers from one account to another.[2] But in all modern civilized countries there is a network of institutions thanks to whose offices a large part of the available monetary assets of the community are actually entered in ledgers, and by this means the majority of payments can be made by *transfers from one account to another of sums representing abstract monetary units.*

Immaterial or bank money is therefore not a purely imaginary concept. It is a reality. It even occupies a leading place in the business of contemporary financial institutions.[3]

Bank money is made up in the main of the aggregate of the sums of money entered in the ledgers of the banks – and of the postal cheques department – to the credit of their clients' accounts. In other words, it consists of *the total of the credit balances.*

Having obtained our preliminary definition we must next see how bank money originates, and determine to what extent it constitutes a monetary medium distinct from real money.

As an illustration of the way in which bank money comes into being we will begin by taking the case of an ordinary deposit bank which is not a bank of issue. And we will suppose in the first instance that this bank not only receives the initial deposit of each of its clients in real money – cash or notes – but that it also effects all its collections and disbursements in the same way. Every evening the credit balance on each account shows how the deposit of each client stands on that day. The total of the credit balances of each bank is therefore equal, by definition, to the total of the sums deposited; and as we have assumed, so far, that all payments have been made in real money, the aggregate credit balances correspond exactly, on this theory, to the supply of real money which the banks have received from their clients. Up to this point, therefore, the sum of abstract money which represents the total of the credit balances is still only money in a *book-keeping sense.* It will not become a separate item in the monetary reserve *until it begins to move of its own volition.*

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[1] In France, under Art. 139 of the Penal Code, this offence is punishable by forced labour.

[2] At first sight it is hard to imagine a consumer in a restaurant or a café or a passenger in a tram or a bus paying their money through an account. This could be done, however, by the use of certified cheques for round sums. But their circulation would in the end lead to their becoming real money.

[3] It is currently admitted, though it would be a delicate matter to obtain reliable statistical evidence, that in many countries the great majority of transactions are settled by means of bank money.

And this is what does actually take place. Each bank is, in fact, able to effect many payments on behalf of its clients without any real money changing hands.

Let us consider firstly the case of a settlement *between two of the bank's own clients.* The bank, which has received its clients' deposits in real money, will not effect this settlement by taking the amount in question from one cash-box and transferring it to another one. It keeps the cash and the notes handed to it for safe custody in a common till, and confines itself to taking the amount from the debtor's account and placing it to that of the creditor. To put it more accurately, it deducts it from the former and adds it to the latter. This operation is known as a *transfer.*

It does not, incidentally, affect in any way the bank's obligations to its depositors as a whole: after the transfer has been made the bank owes more to one client, but correspondingly less to another. *It can therefore multiply its operations of this kind indefinitely without touching its cash reserve.*

When the payment to be effected is between a client of our bank and a client of another bank the operation becomes more complicated, but settlements of this kind are also eventually carried through without real money changing hands. In practice each bank makes up every day a bundle of cheques and bills representing what it owes to other banks, and another one representing what is owing to it by other banks. Thanks to the offices of a clearing house,[1] it clears in this way every day the total of its claims and the total of its debts, only a very small difference remaining outstanding. It should be added that all the ordinary banks have an account at the central bank of issue, which settles such balances by means of transfers.

It will be seen, therefore, that as a result of the banks' ability to effect payments on their clients' behalf by book entries, i.e. by bank transfers and through the clearing, it will be possible for the *amounts* which represent the clients' assets – or in other words the aggregate credit balances – *to be utilized, in so far as they do not entail payments in real money, to their full extent* without any displacement of the real money originally deposited. Consequently they constitute *a supply of money which is for the most part of a distinctive character, a stock of bank money.*

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[1] See BERTRAND NOGARO, *Cours d'Economic politique,* 2nd Ed., Vol. 1, p. 468.

In real life, however, deposits are not made only in real money. For *thanks to the use of cheques, the depositors themselves will set the bank money in motion.* It is, of course, open to any depositor to make deposits and withdrawals in real money. He may, when he effects a withdrawal in this way, make use of a cheque from the cheque-book supplied by the bank; in this case the cheque endorsed by himself is merely a receipt. But more often than not he uses cheques to pay his creditors, in which case he hands a cheque to the person whom he wishes to pay. The latter hands it in to his own bank. The bank in turn collects the amount through the clearing mechanism described above and places it to the credit of the payee's account. It is by encashments of this kind that the credit balances on most of the accounts are maintained. We may say, then, that in practice *the deposits themselves are largely made in bank money.*

Nevertheless, if we examine the overall picture presented by bank deposits at a given moment, we cannot fail to notice that the deposits which are made in this way are not sufficient in themselves to swell the total of the credit balances, *for what they add to one account they take from another.* Up to this point, then, bank money has to a certain extent *taken the place* of the real money, a part of which has flowed back to the issuing bank, but the total stock of money has not been increased.

If credit balances are to be increased, or, in other words, if bank money over and above the amount corresponding to payments in real money effected by depositors is to be created, the *credit* factor has to come into operation. This credit is created by the banks. Let us see how this is done.

Let us observe first of all that even if a bank effected all its collections and disbursements in real money, it could create credit by utilizing the available funds of its depositors. In accordance with the *law of large numbers,* cash movements effected for depositors as a whole are much more regular than the cash movements of each considered separately; for the outgoing surplus on certain accounts is largely offset by the incoming surplus on certain other accounts. Hence *the bank has no need to keep its reserve at a level equal to the total of its assets, or, in other words, to the credit balances of its depositors.* It can consequently employ part of the sums deposited by its clientele in providing credit for a certain number of its individual clients.

In this case, however, in so far, that is, as the bank is assumed to effect all its collections and disbursements in real money, its stock of money remains unchanged; it is still made up of the sums of real money deposited with it; *it merely circulates more rapidly*, since, thanks to the credit created by the banks, use is made of funds which without their intervention would have been immobilized in private cash-boxes.

It will be remarked, moreover, that the credit thus created by the banks will be instrumental in increasing deposits, because the people who have received the money put into circulation by such credit will be able to deposit some part of it. But in no case will the excess of credit balances over the supply of real money deposited with the banks constitute a new element in the stock of money, actual bank money, *until the banks make use of it in their turn*, by book entries, *to create credit.*

This is, moreover, what takes place in reality. For instance, Bank A opens a credit for 10,000 francs for its client *a*; the latter draws out the 10,000 francs by making out a cheque to *b*, a client of Bank B. Once the 10,000 francs has been collected it will be placed by Bank B to the credit of *b*'s account. But this time the credit balance of *a*'s account is not correspondingly reduced, since it was Bank A which advanced the 10,000 francs.[1] As, therefore, the credit operation has *increased one credit account without causing a corresponding reduction in another one, the sum total of the credit accounts has been increased.* As on the other hand the amounts entered to the accounts are used as money, thanks to the book entries, *the credit operation has been instrumental in creating a sum of bank money equal to the amount of the credit.*

This explains the meaning of the aphorism, which appears at first sight paradoxical and disconcerting, formulated by the British writer Hartley Withers,[2] 'loans make deposits'; that is to say, bank money.

It would be going too far, however, to conclude from the foregoing

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[1] In practice, the operation can take several different forms, but the result will still be the same. In English banking practice a banker who opens a credit – even an unsecured credit – immediately enters the amount of the credit to his client's account, the credit balance of which is at once correspondingly increased. It is therefore the opening of the credits which directly increases the sum total of the banks' credit balances. The same thing applies in France when the credit results from a discounting operation and also, as a rule, from advances against securities. In the case of unsecured credits it is customary in France simply to authorize the owner of the current account to overdraw up to a certain amount. In this case the cheques drawn against the account reduce it proportionately to the amount placed to other accounts, and the credit transaction does not, at first sight, imply an increase in the total of credit balances. But it does nevertheless give rise to supplementary credit transactions, based not on the client's balance, which is a negative one, but on those of the lender bank, and the existence of debit accounts created in this way with the bank's consent is equivalent to an increase in the credit balances.

[2] In his book *The Meaning of Money*, which has been translated into French under the title of *Qu'est-ce que la Monnaie?* Hartley Withers shows that according to the balance sheets of the leading London banks, the loans of all kinds made by such banks amount to about three-quarters of their deposits. And as every credit implies a deposit – for the beneficiary of the credit draws cheques which are cashed by the

– an error frequently made – that an ordinary bank can 'manufacture' credit absolutely arbitrarily and unconditionally by the *ex nihilo* creation of bank money; that is, by entering any sum it pleased to any account, to be afterwards transferred indefinitely from account to account on the same terms as the funds originally deposited.[1]

If it were possible to set up a *single bank* conforming in all respects to the classic model, and functioning in a country in which all the inhabitants had all their pecuniary assets entered in the bank's ledgers and effected all their payments by transfers from one account to another, no doubt *such an institution could create credit by creating bank money, just as an issuing bank can do so by creating fiduciary money*: a few strokes of the pen on the part of its accountants would be all that was necessary, and it would be even simpler than printing notes. It must be admitted, moreover, that a central bank of issue, at which all the other banks have accounts, does occupy a position somewhat similar to that of our imaginary single bank. It can create credit by entering a sum to an account, consequently through the agency of bank money, without incurring any obligation other than that of being able at the client's request to turn it into real money, which it is also able to do within the limits of its right of issue.

But *the other banks* can only create bank money in order to create credit *under certain conditions*. Each one can only effect bank transfers between its own clients. When it opens a credit for one of its clients and the latter draws a cheque on it in favour of a client of another bank, the corresponding sum will have to be *transferred* to the other bank. Now, settlements between banks are normally carried out through the clearing; but the clearing only operates *in so far as reciprocal commitments balance one another*. Hence, for an ordinary bank to be able to create credit by the creation of bank money, it must have sufficient credits with other banks to enable it to transfer the amount of the credits which it has opened through the clearing.

payees named on the cheques – he concludes that three-quarters of the deposits originate from the loans themselves.

In real life, each depositor hands in for encashment all the instruments on which he figures as the payee – including those which originate from the opening of credits – and their amount is credited to his account; conversely, the amount of the cheques drawn by him against his account is debited to him, and the credit balance is made up of the difference. But the fact of the total of the loans being equal to three-quarters of the total of the credit balances by no means proves that three-quarters of the credit balances *originate* from the loans.

[1] Certain writers, notably Maurice Ansiaux, have drawn a parallel between the power to create fiduciary money up to a maximum limit corresponding to a multiple of the metallic reserve fixed by law, and the power assumed to be possessed by the ordinary deposit banks of creating bank money bearing no definite relation to their cash reserves. This analogy would not appear to be justified, and as we go on we shall see that the power of creating bank money is not exercised as arbitrarily as these writers imagine. In this connexion see BERTRAND NOGARO, *Cours d'Economie politique*, Vol. 1, 4th Ed., p. 495 *et seq.*

Let us return to our example. Bank A has advanced 10,000 francs to its client *a*. The latter has given a cheque for the same amount to *b*, who is a client of Bank B. We are told that Bank B collects its 10,000 francs and credits them to *b*'s account, which is correspondingly increased. There is no correlative reduction of *a*'s account, since the 10,000 francs were lent to him by his bank. It is concluded from this that the credit transaction has increased the total of credit balances, or in other words the volume of bank money. *Loans make deposits!*

This reading of the situation is correct so far as it goes, but it is incomplete. For before the 10,000 francs advanced by Bank A can go to swell *b*'s account at Bank B it must be *collected*, or in other words *transferred*. If Bank A were to increase its operations of this kind indiscriminately, it would not be able to honour the cheques which would be presented to it by the indirect beneficiaries of its credits. The amount of these cheques has to be added to the daily pile debited to it by the clearing; but to enable the settlement to be carried through, the bank must itself have cheques or commercial bills to a corresponding amount to present to other banks. Now, *the cheques and bills coming up for collection are provided by the bank's own depositors.* Since the latter do not make use of the whole of the assets constituted by their deposits and encashments, the bank employs a part of the available surplus in extending credit. But even when it does this by means of bank money, its position is exactly the same as that of a bank which creates credit by means of real money, i.e. *it can only do so to the extent of the liquid funds provided by its deposits.*

It is true that amongst the cheques handed in for collection by its depositors there are some which are likewise the indirect result of credits opened by other banks. When Bank A in our example opens a credit for 10,000 francs for its client *a*, who hands over the amount to *b* of Bank B, the latter bank is enabled to give a similar credit to one of its clients, who will pass the amount on to a client of Bank A. Thus, in so far as the operations synchronize, the commitments incurred by one bank as the result of the credits which it consents to open are *offset* by those assumed in the same way by other banks. But it is *always in proportion as the total of its commitments offsets the total of its outstanding claims that an ordinary bank can create bank money for the purpose of creating credit.*

However this may be, the bank money created by the banks for the purpose of providing credit *adds* to the total of the original credit balances, which were only the book-keeping entries representing deposits made in real money. By creating bank money, therefore, the banks are doing more than bringing into existence a new type of money, abstract money which is more or less a substitute for real money. *In so far as their credit operations serve to swell the credit balances resulting from* *the deposits of their clients in real money, they are adding fresh sums of money to the cash funds already in existence. In other words, they are increasing the stock of money.*

It may be added that the possibility of effecting payments by book entries does not depend only on the pre-existence of liquid assets in the shape of bank money. It is, of course, generally admitted that a person who gives a cheque to one of his creditors must be in funds; in principle, then, it is out of the funds standing to the credit of his account, or out of his credit balance, that he makes his payments. Let us consider, however, the case of a holder of a current account who has on average a credit balance of around twenty thousand francs, but whose account has a very regular turnover. Every day the post brings the bank which keeps his account cheques and bills for collection to an amount of roughly a hundred thousand francs, and cheques drawn against his account for approximately a similar figure. In these circumstances the bank can effect payments every day for this client involving not twenty but at least a hundred thousand francs. For the funds actually at his disposal do not consist only in his credit balance of twenty thousand francs, but also in the hundred thousand francs which are credited every day to his account, which enable payments for a corresponding amount to be met immediately. *Thus, wherever the outgoing and incoming entries on an account synchronize, payments can be made through the clearing even when there is no pre-existing stock of bank money, simply by virtue of the existence of an account.*

When, moreover, the volume of transactions expands, either owing to an increase in production or following a rise in prices, the daily amount of cheques and bills coming up for collection and that of cheques to be met increase simultaneously. The sums of money passing through the clearing will be larger, while in the event of their contraction the effect will be reversed. These book-keeping settlements are therefore very elastic, even without the intervention of the credit factor.

It is true that the credit balances, which are not increased by the fact of the increase in the total of payments effected, may become insufficient to cover any differences which may arise between the in-payments and the out-payments on the accounts. Recourse must then be had to credit in order to increase them. As, however, in so far as the holders of accounts have recourse to discounting, bills for a proportionately larger amount will, on this theory, be discounted, it looks as though *the volume of bank money tends to adapt itself automatically to the volume of transactions effected.*

§6. Monetary stocks and monetary circulation

Whatever the nature of the monetary media put into circulation in a given country, the quantity of money or, more accurately, of monetary units can, like any other stock of goods, be assessed either at one particular moment or over a certain period. We have here two separate ideas which we must be careful not to confuse if we are to argue our case closely. Unfortunately the terminology employed in this connexion is, like many terms used in political economy, vague. In French the expressions 'stock of money' and 'monetary circulation' are often used indiscriminately.[1] But as the difference between the two concepts demands that a verbal distinction be made, we propose here to use the expression '*stock of money*' to denote the mass of money in existence at one particular moment, and '*monetary circulation*' to denote the mass of money visualized *over a certain period.*

Thus France's stock of money, at the time when she used metallic money, comprised:

(1) the coins made of gold, silver, and other metals distributed at one particular moment amongst all the public and private banking institutions and the purses of private citizens;

(2) the notes distributed in the same way at the same moment;

(3) the bank money entered, still at the same moment, in the names of all the holders of accounts at the banks or the postal cheques department.

The total of the notes outstanding – distributed, that is, amongst the various banking institutions and the various pocket-books – was published once a week by the Bank of France.

The estimated figure for bank money was taken from the total of the credit balances published by the banks.

As for the quantity of metallic money, an approximate estimate was obtained by combining the coinage statistics with the results of a special inquiry.

An ingenious statistician who was at the same time an able economist, M. A. de Foville, had evolved the following method. Knowing the amount of metallic coin which was minted annually, he set out to determine the quantity of coins of each category in existence on a given day by tracing the number of coins which remained out of each issue. He accordingly had a statement made out at the particular day of the coins contained in the coffers of 30,000 public and private banking institutions. The gold and silver coins were classified by date, and the proportion of coins for each year included in the total was established. By comparing this proportion of coins still in existence out of each issue with the proportion of those minted each year, and assuming the more recent issues to be still intact, it was possible to calculate approximately how many still remained out of each issue: its total represented the existing stock of metallic money.[1]

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[1] The latter expression may perhaps claim to be an approximate rendering of the English word 'currency'; but it has not the same sense, and is still more lacking in precision.

It will be remarked, however, that if it is desired to arrive at a total for the three components of which the stock of money is made up – metallic money, fiduciary money, and bank money – the possibility of overlapping must be eliminated. For instance, the metallic money shut away in the banks' vaults must not be shown, for this does not circulate, and its place is taken in exchanges by the notes which have been issued. On the other hand, the real money – cash and notes – which the ordinary banks keep in their tills must be deducted from the supply of bank money shown on statements of credit accounts.

§7. Velocity of circulation of money

$$mv = M; \; v = \frac{M}{m}$$

The *monetary circulation* over a certain length of time is the stock of money in operation. The monetary units which exist in one or other of the forms indicated above move mostly from one till to another – if they are real money – or from one account to another – if they are bank money – as they are required for the successive payments effected during the period under consideration.

The total of the amounts represented by these successive payments gives us our figure for the *monetary circulation* during the period. This total is equal to the amount of the stock of money multiplied by a coefficient corresponding to the average number of times each monetary unit changes hands. *The monetary circulation* (M) is therefore a multiple of the stock of money (m). The multiplier for any given period is higher in proportion as the number of displacements during the period has been larger. The idea of *velocity of circulation* is thus introduced into the picture.

If we know both the amount of the monetary circulation (M), that is, the total of the sums of money applied to successive payments during the period, and also that of the stock of money (m) at one particular moment, the ratio of M to m gives us our coefficient of velocity: $mv = \frac{M.}{m}$

If we know the stock of money (m) and the coefficient of velocity, we can arrive at the amount of the circulation (M) for the period, for if $v = \frac{M,}{m}$ then $mv = M$.

The stock of money required to effect payments of a given amount over a given period must be larger in proportion as the payments are made at longer intervals – when, that is, the cash changes hands less frequently, so that the velocity of circulation is slowed down. On the other hand, it is possible for a large total of payments to be effected, or for money to circulate rapidly, when the average number of displacements or the coefficient of circulation is high. Thus, a stock of 5,000 monetary units which has changed hands four times during a specified period will have enabled payments to be made for an amount of 20,000 units in precisely the same way as a stock of 10,000 units which has only changed hands twice.

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[1] See A. DE FOVILLE, *La Monnaie*, p. 133.

The conception of velocity of circulation has long found a place in political economy.[1] But it must be emphasized – for on this point there is sometimes confusion in the minds of economists – that it is meaningless except where the supply of money is visualized over a long period of time. Hence it has no part to play in the consideration of a quantity of money regarded at one particular moment, or when the given quantity of money itself represents the quantity circulating during a given period. It does come into the picture, on the other hand, when, the stock of money – at the particular moment – being a known quantity, it is a question of studying the monetary circulation – when the money in circulation, for instance, has faced a certain quantity of goods over a certain period.

It should also be observed that statistics have little to tell us about anything but the actual stock of money, and that we have nothing on which to base our calculation of the velocity of circulation except some very fragmentary information relating to bank money. Thus a comparison of the total of the payments made for account of the depositors of the Bank of France with the average of their daily credit balances has established a coefficient of velocity of circulation. It was estimated, for example, that the coefficient was 110 in 1884 and 370 in 1929.[2] Study on these lines may lead to highly instructive conclusions, but there is no means of calculating the velocity of circulation of money in its more general aspect.[3]

[1] An extremely concise and interesting explanation of it is to be found in CANTILLON's well-known *Essai sur la Nature du Commerce en Général*, which was published in the middle of the eighteenth century. In contemporary economic literature first mention should be made of the theories developed in IRVING FISHER's book *The Purchasing Power of Money*. See also J. FEILEN, *Die Umlaufsgeschwindigkeit des Geldes*; M. HOLTROP's study, of the same title, in his *Beiträge zur Geldtheorie*; MINORU NAKATANI, *A Study in Deposit Currency* and *New Theory of Money and Credit*; finally, G. LETINIER, *La Circulation de la Monnaie et le Niveau des Prix* in the *Journal de la Société de Statistique de Paris*, November 1943 and January and February 1944.

[2] This method of calculating velocity of circulation is dealt with in a remarkable study by PIERRE DES ESSARS which was published in 1895 in the *Journal de la Société de Statistique de Paris* under the title of *Vitesse de Circulation des diverses Formes du Stock monétaire*. Pierre des Essars' studies have been continued. See the articles in the same periodical by PUPIN, October 1917, and G. ROULLEAU, April 1937, also that by DENUC, *Essais de la Détermination de la Circulation monétaire en France de 1870 à 1923*, in the *Bulletin trimestriel de la Statistique générale de la France*, April-June 1932.

[3] IRVING FISHER, in the work referred to, did attempt to solve this problem. But ingenious as his attempt is, it is nevertheless of a very speculative character.

CHAPTER II

CURRENCY SYSTEMS

§1. Currencies and currency systems

We have just defined the three categories of money: commodity money, which in modern times is metal money; fiduciary money, which is real money possessing no commodity value, consisting of paper *notes*; and immaterial or *bank* money. And here we should add that metal money is made of various metals, firstly the precious metals, gold and silver, and then the secondary metals, nickel, bronze, etc. Now, the money used in the various countries includes *several of these metals, the combined use of which leads to the building up of complex monetary systems.*

Thus, in France at the beginning of the present century there were in circulation at the same time small bronze and nickel coins worth 5, 10, and 25 centimes, silver pieces worth 50 centimes, 1, 2, and 5 francs, gold pieces worth 10 and 20 francs – and also, more rarely, of 40, 50, and 100 francs – and notes worth 50, 100, 500, and 1,000 francs. In addition to these, cheques could be drawn for any amount of francs and centimes in bank money.

The use of bank money is, as we have already observed, inappropriate for small everyday payments such as fares, meals in restaurants and cafés, etc., which do not imply any continuous relationship between the debtor and the creditor. It must consequently be admitted that from a practical standpoint money of this kind cannot be self-sufficing,[1] and that the use to which it is put implies the simultaneous use of real money.

On the other hand, the employment of metal money entails the use of several metals, those having the lowest value to a given weight being reserved for the payment of trifling sums, whilst those whose value expressed in a given weight is higher are used for the payment of larger ones. Whence the concurrent use of coins made of gold, silver, and non-precious metals.

As a result of the increasingly large volume of transactions effected, paper has come to be preferred to metal money for many purposes. A paper note can be printed to represent any amount of monetary units, small as well as large. The use of notes is unsuitable, however, for very small denominations, for these circulate more rapidly than the others and paper deteriorates very quickly. Accordingly, when the stock of real money is mainly composed of paper it is usually supplemented by small metal coins (nickel, bronze, aluminium, etc.). When notes are used as real money, gold and even silver coins can be eliminated.

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[1] In theory, it is perfectly possible to visualize that in a country where all the pecuniary assets of the inhabitants were entered in a ledger every account-holder would be given a book of certified cheques of various denominations which he would pay out for his current purchases like notes, and the persons who received them would have them credited to their accounts. In principle, such cheques would not, strictly speaking, constitute real money, but orders setting the bank money in motion. It is obvious, however, that when compared with the use of real money such a state of affairs would mean the exact opposite of practical progress.

From the standpoint of the nature of the monetary media used, we can, in the case of modern civilized countries, distinguish between two categories of monetary systems: those which entail the use of precious metals and those in which the real money consists of notes and a subsidiary coinage made of non-precious metals. In current phraseology, countries which utilize *precious metals* are said to be *on a metal standard*, whilst the others are said to be *on a paper standard.*

But before going on to study the functioning of the various currency systems it is necessary to define these more exactly.

§2. Metallic currency systems

The systems known as metallic currency systems are based in the main on the use of gold or silver or both together. A distinction is traditionally made between gold-monometallist, silver-monometallist, and bimetallist countries. But it should be observed at once that despite the name applied to it, a monometallist country is not necessarily one in which one single metal is used. Both gold and silver coins are in general use in a gold-monometallist country, for instance. The criterion of monometallism and bimetallism, therefore, is not the fact that the coins are made of one or of two metals, but that one single metal is regarded as the basis of the monetary system – it is called the *standard* metal – or, alternatively, that both metals alike form the basis of the system. Accordingly, gold-monometallism and silver-monometallism are often referred to as 'the gold standard' and 'the silver standard', and bimetallism as 'the double standard'.

The metal which is regarded as the standard possesses, in modern currency systems, *two essential features*: it can *be freely coined, and it has unlimited legal tender status.*

It can be freely coined. This means literally that anyone owning an ingot made of this metal can[1] take it to the mint, which returns it to him in the form of an equal weight of minted coin.[2] But the system of free coinage has a much deeper significance than this. It has the effect of *making the coined money identical with the commodity constituted by*

[1] Subject to certain regulations as to weight and alloy.

[2] In many countries a small deduction is made to cover the cost of minting. But in others, notably in Great Britain and the United States, no such charge is made.

the ingot. Every ingot can be turned into coin; and as the coin can be melted down into ingots, the distinction between the coin and the ingot is a very fine one. Hence, the value of an equal weight of fine metal cannot differ to any appreciable extent whether it takes the form of an ingot or of coined specie, no matter whether the coins are domestic *or foreign ones.* Finally, as in modern monetary systems *the monetary unit is, in principle, defined once and for all in terms of a certain weight of fine metal,* a clearly defined and in no way arbitrary relationship is established between all coins made of the same metal: *it is the relation between their respective weights of fine metal, which is known as their 'par' value.*

On the other hand, coins which are made of the metal which is regarded as the basis of the system have *unlimited legal tender status;* that is to say, any sum of money, however large, can be paid in such currency. And it is consequently *into this currency that bank-notes are convertible.*

Thus, *in a gold-monometallist country gold alone can be freely coined, it is only gold coins which are full legal tender, and it is into gold that notes are convertible, unit for unit.*

There are also *silver coins* and coins made of various other metals which are used as small change. And *there is a strictly defined exchange ratio between all these coins,* for each represents a certain number of the same monetary unit or of monetary units which bear a fixed relation to one another. But under a régime of gold-monometallism silver coins are in themselves only token money. The mints buy the silver at market prices and only coin it when instructed to do so by the public authority. Silver coins are, moreover, only accepted in discharge of debts up to a small maximum limit fixed by law.

In a *silver-monometallist country it is silver alone which can be freely coined; only silver coins are full legal tender, and it is into silver alone that bank-notes are convertible.*[1]

Finally, *in a bimetallist country both silver and gold can be freely coined and are unlimited legal tender, and notes are convertible either into gold or silver at the option of the bank of issue.*

It should be observed that a fixed exchange ratio does nevertheless exist under this régime between coins made of the two metals, so that the monetary unit is defined both by a certain weight of fine gold and a certain weight of fine silver.

Thus, the law of the 7-17th Germinal of the year XI originally defined the franc as corresponding to 5 grammes of silver nine-tenths fine. But it had also indirectly defined the gold franc by establishing a legal ratio between the two metals of 1 to 15½.

This raises a point which is of great importance from the standpoint of monetary theory, to which we shall return later. For what we are faced with here is no less than the extremely important question of how the establishment of this permanent ratio of value between money made of two different metals can be reconciled with a system based on the principle of free coinage, hence on commodity money.

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[1] Generally speaking, there is no stock of coined gold in silver standard countries.

Monometallism and bimetallism as we have just defined them are the prototypes of the currency systems of the present day. But this by no means implies that all the systems of metallic money can be included in so simple a classification.

Thus, between 1665 and 1695, before the advent of bimetallism according to our definition, a currency system was in operation in Great Britain in which there was free coinage of gold and silver, but no legal relationship between the two metals, or in other words, no link between the coins made of such metals: this was the parallel standard.[1] Between 1695 and 1699 this system of bimetallic autonomy was replaced by *the periodic fixing of an official price for the guinea in relation to the silver pound.* It had, moreover, been the general practice under the *ancien régime* for the mints to accept gold and silver, which were bought at varying prices in money of account and put into circulation concurrently in the form of coin, the prices of which were likewise officially fixed in money of account and subjected to frequent alteration: whence the existence of legal ratios, varying from country to country and changing from time to time, between coins made of the two metals.

On the other hand, free coinage and legal-tender power, which we have seen to be the two essential features of the metal standard, may be dissociated. After 1873, *in countries which had previously been bimetallist,* silver coins – or at least some of them – continued to be legal tender, whereas *the free coinage of silver was suppressed.* Because of the way in which it originated, this new system was given the name of *incomplete* or '*limping*' *bimetallism.* We shall see that in reality this system is for the most part closely allied to *gold-monometallism.*

The same thing may also happen in a *silver-monometallist* country. This was the case in British India from 1893 onwards, the rupee continuing to be legal tender *though silver ceased to be accepted for free coinage.*

It is possible, again, for the whole of the stock of real money used for payments *inside* a particular country to be made of *silver or paper,* but for the country's gold reserve to be sufficient to guarantee *the convertibility* of the silver or paper money *at a fixed rate* for its external payments, so that for purposes of international payments – a factor of supreme importance – it is on the gold standard. This system was grafted on to the previous régime in 1899 in India under the name of *gold exchange standard.*

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[1] It was as a result of the absence of any legal link between coins made of these two metals that it became necessary to resort to *contract money* and a system of double-entry accounting. As a general rule, however, silver money was used for small transactions and gold for more important ones.

In the same year a similar system, *but with an internal paper currency,* was adopted by the Argentine Republic.

§3. The so-called paper currency system

We hear a great deal about metallic-currency systems, but we generally hesitate to speak of a 'system' of paper money. Recourse to paper money is regarded simply as an expedient to be deplored, and it was, in fact, on grounds of expediency that the system of paper currency was first established. But there is no reason from the theoretical standpoint why it should not be regarded as a system. And there is all the more reason for doing so because, as we shall see later, perfectly coherent and rational paper-currency systems have actually been put into operation.

As we have already indicated, *the dominant feature of a paper-currency system is the absence of commodity money.* In principle, therefore, it consists entirely of *fiduciary and bank money.* The stock of real money is mainly composed of notes. It includes in addition the use of secondary metals as token coins of a semi-fiduciary nature. It may even include the use of silver, also in the form of token coins.

This system entirely excludes the *use* of a 'standard' metal, i.e. gold or silver, under a system of 'free coinage' or its equivalent. If, as in the instance given above, a gold reserve is held which can be utilized for foreign payments, the paper-currency system is abandoned and the gold standard adopted, at least as far as foreign exchange is concerned.

On the other hand, the *existence* of an *unused* stock of gold or silver does not prevent a country from being on a paper-currency standard. At the end of the nineteenth century Spain was on a paper standard notwithstanding the fact that she possessed a store of gold immobilized in the vaults of the bank of issue and a store of silver which was too depreciated in value to be utilized for foreign payments. Again, between 1914 and 1926, France, though she had large gold reserves, was on a paper-currency standard. Her notes, which had ceased to be convertible into gold – and gold itself being no longer exportable – had become a paper currency.

Paper money is essentially a paper monetary medium which is *inconvertible into metal* – it being understood once and for all that 'convertible' means convertible at a fixed rate. In other words it is a *forced currency,* and as the notes only circulate within the territory of the country which has adopted them as its currency, it is exclusively a *domestic* currency.

Although, however, a paper-currency system is by definition one which has an 'inconvertible' currency in the sense that it is not convertible *into metal* it is nevertheless possible to set up a mechanism to secure the *regular convertibility of this internal fiduciary money into foreign currencies.*

We shall see later how perfectly rational systems of paper currency convertible into foreign currencies have been established. No purpose would be served by defining these systems until we have studied the machinery of external payments. Let us content ourselves for the moment with remembering that there are *two principal kinds of paper-currency systems: the empirical system of paper money which is all inconvertible, and the non-metallic currency systems which include a conversion mechanism for external payments.*

§4. Outline of the functioning of currency systems

The study of currency systems and their functioning brings us up against problems of two kinds. In the first place, when we consider a domestic currency system in itself, as though it functioned in a closed economy, the question which occurs to us is *what are the relations created between all the monetary instruments representing different amounts of the same monetary unit.* As exchanges are also effected between nations which have their own currency systems, we shall then have to inquire *how the functioning of each such system is affected by its relations with the systems of the other countries, which are often different ones.*

The first of our two problems, then, is whether, and in what conditions, different monetary media, used concurrently, can preserve a mutual exchange relationship corresponding to the number of monetary units which they represent. Here we have a bronze, nickel or aluminium coin which, according to the inscription on its face, represents 10 centimes, a silver piece worth 1 franc, a gold piece worth 10, a bank-note representing 100, and a cheque which entitles its holder to draw 1,000 francs entered on a banking account. Does the exchange ratio actually established between all these different monetary instruments correspond to their legal value? Can we always exchange ten 10-centime copper-alloy coins for one silver franc piece, ten silver 1-franc pieces for one gold franc piece, ten gold 10-franc pieces for a 100-franc note, ten 100-franc notes for the cheque for 1,000 francs, and vice versa? Will not the difference in kind between the various sorts of money employed present a certain amount of difficulty?

Where the exchange of small copper-alloy coins is concerned, as these only serve for small payments, no appreciable difficulty arises. Certain traders or certain companies who, owing to the nature of their transactions, require a large amount of small change sometimes pay a trifling commission to the persons who provide them with it. But this is too small to result in an official agio capable of altering the legally established and generally recognized relationship between these small coins and other coins.[1] They cannot, therefore, command any appreciable premium over other money, except possibly relatively to notes if the latter were to become seriously depreciated, nor can they lose their value to any great extent.

The actual exchange ratio between silver coins and gold coins also corresponds as a rule, in domestic transactions, to the ratio fixed by law, even in certain special circumstances where there is a wide gap between the value of the metal contained in the coins and their legal value. Thus, in France during the whole of the nineteenth century and after it never ceased to be possible in day-to-day commercial transactions to exchange four silver 5-franc écus for a louis worth 20 francs. And yet the commercial value of silver had declined since 1873 to such a point that towards the end of the nineteenth century the commodity value of a 5-franc piece had fallen to scarcely half its legal value. Silver coins had thus become semi-fiduciary money, like the metal token coins. But this did not entail an internal agio.[2]

The problem of the exchange ratio between notes, which are purely fiduciary money, and metallic money is much more complex. If the note is actually *convertible* into one of the metals, the exchange ratio between the note and the metal remains constant. It is *quite another matter* when the note is *inconvertible.* The experiment of the *assignats* speedily demonstrated that a 100-livre note could not be exchanged for 100 livres in metallic money. The same thing happened in the United States during the Civil War, though here the loss was much smaller. The loss on notes is frequently related, as we shall see, to the necessity of obtaining metallic money for foreign payments. In this case it is generally indistinguishable from the *exchange loss,* for when it makes its appearance metallic money quickly vanishes from circulation. But even inconvertible notes may be said to preserve a constant exchange ratio to metallic money and convertible notes, if the proportion between the various categories of money is such that metallic money can be obtained without difficulty when circumstances necessitate its use.

As for bank money, it can, in fact, unless the institution where it is deposited is insolvent, be converted into real money – which an ordinary bank is normally able to procure from the bank of issue – and it *shares the fate of the real money into which it is convertible.*

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[1] We shall see, however, that a conversion problem does arise at times between coins made of a secondary metal such as copper or zinc and money which is made of one of the precious metals. See below, Part II, Chap. IV.

[2] It is true that there have been times when gold or silver coins have commanded a slight premium, but this was for export, which is another matter – with which we shall deal later.

But if we wish to obtain a clearer idea of the conditions in which a currency system functions we must inquire *how its functioning is affected by its relations with other currency systems*; and this depends primarily on how it is constituted.

Let us consider first of all the metallic-currency systems. We see from what has been said above that when several countries apply a system of *free coinage* to the same metal they have the *same basic money*, or in other words the *same currency standard*. For in all of these countries specie can be remelted and turned weight for weight into the currency of other countries made of the same metal. When a country is bimetallist it has the same currency as both the gold-monometallist and the silver-monometallist countries, and *it acts as a link between the two systems*. In her bimetallic period, for instance, France had the same currency as Great Britain, since the 20-franc pieces could be transformed by remelting into pounds, and vice versa. She also had the same currency as India, since the 5-franc écus could in the same way be turned into rupees and vice versa. She thus possessed a means of payment common both to Great Britain and India. Furthermore, the pound could be indirectly transformed into rupees by being first turned into francs and the francs being afterwards turned into rupees, or vice versa.

It should be observed, however, that the functioning of the machinery of free coinage in international payments is conditional on the free export and import of the precious metals. This qualification can be generally taken as understood, because it is practically always borne out by events. When the free import and export of precious metals is suspended, however, two countries which have the same currency system, say the gold standard, no longer really have the same money.[1]

But whilst it is free coinage which normally gives two countries which use the same standard metal the advantage of a common currency, the same result can be obtained by other means. The simplest method is undoubtedly the free circulation in different countries of coins in their minted state. This was the course followed by the countries belonging to the *Latin Union*,[2] all of which, having adopted the franc as their monetary unit, agreed to allow gold and silver money to cross their frontiers. At the end of the nineteenth and the beginning of the twentieth century France's circulation included foreign gold pieces very similar to the 10- and 20-franc pieces (Russian and Hungarian coins), which were accepted by the French Treasury. Dollars of various origins, notably Mexican dollars, still circulate in China. The dollars are not identical, but they are sorted out and stamped by money-changers, and the value allotted to each dollar in exchanges depends on its weight and content. China was indeed until recently on the *weighed* silver standard.

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[1] Thus the free import of gold into Sweden was suspended in 1916. This meant that Sweden no longer had the same currency as Holland, for instance, though Holland was also on the gold standard, and the rates of exchange between these two gold-currency countries began to fluctuate.

[2] See below, Part II, Chap. I, §3.

Finally, another procedure which has the effect of free coinage is to be found in another system. If *foreign* coins, instead of being remelted, are *exchanged* in the country which receives them for fiduciary or bank money for *a number of units of the domestic currency equal to the number which would be obtained if they were turned into metallic coin*, the result is the same as if they had actually been so transformed. Instead of sending the foreign coin to the mint, it is simply sent to the bank of issue.

It follows that, *for two or more countries to secure the benefits of a common currency*, it is not necessary for them to have the same currency, as it is when they have the same metal standard; instead of importing the specie and if necessary reshaping it, their monetary units can simply be *converted one into another and back again* at a fixed ratio of exchange.

We shall see that this problem of *convertibility at fixed rates* dominates the relations between the various domestic monetary systems.

And we shall see, too, that the same problem arises, and is possible of solution, *not only in the case of currency systems based on metal, but of other systems as well.*

Now the internal functioning of a currency system may depend upon the solving of this problem. The exchange ratio between fiduciary and metallic money inside any one country is not, as we shall see, affected merely by the fact of notes being convertible into metal inside that country, or, in the case of inconvertibility, by the quantities issued; it can also depend on whether the domestic currency is, or is not, convertible *into foreign currency.*

We shall see, then, that the theory of money is largely a theory of the functioning of complex and varied monetary systems and the relationships which arise between them. Hence, the elaboration of this theory demands a careful and detailed study of the formation and evolution of the monetary systems themselves. But such a study presupposes a knowledge of the actual working of international monetary relations. We propose, therefore, to devote our next chapter to a short survey of the technique of foreign exchange.

CHAPTER III

INTERNATIONAL PAYMENTS AND FOREIGN EXCHANGE MECHANISM

§1. Exchange mechanism and offsetting of international payments. Rates of exchange

The creation of money is an attribute of the supreme authority, and each separate monetary system is put into operation by the State within the territory over which it has jurisdiction. In principle, and in the absence of international agreements, the circulation of a currency is limited by the frontiers of the country where it is valid. Exchanges, however, go beyond frontiers and call for settlements.

We have seen that when different states have adopted monetary systems based on the same metal standard they have, in fact, had a common currency. But even where this is the case the transport of the coin entails expenditure, and very often there is the cost of reminting to be borne in addition. Attempts have been made to eliminate this expenditure, and a mechanism of international payments has accordingly been set up.

Countries which have no common currency have all the more reason to adopt a mechanism of this kind.

The method of settlement which has long been operative in long-distance payments, and which is still used in international payments, is based mainly on the negotiation of bills of exchange.

The use of bills of exchange, 'drafts' or 'foreign exchange' as a means of payment between distant centres dates very far back,[1] and it has long been current even between centres situated in the same country. Nowadays, payments between one town and another in the same country, as well as in the same town, are made for the most part by bank transfers and clearing arrangements done through the central banks, and frequently also by postal cheques. If the transfer of a balance from one place to another entails the passing of real money, this is for the most part done through the agency of the bank of issue, which keeps its branches or agencies regularly supplied with metallic or fiduciary money, so that the transfer of a sum of money between two banking centres on the instructions of the client of a bank *does not normally involve any immediate and special transmission of cash.* Payments from one town to another in the same country are made at *a fixed charge.* But there are no international bank-notes, and banks do not undertake, either with or without charge, to transmit sums of money between two towns in different countries.

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[1] It dates from the Middle Ages, and exchange markets, at least in an embryonic form, appear to have been set up in certain towns, such as Seville, in the eighteenth century. In any case, the trade fairs facilitated the concentration of the supply and demand for exchange, and in the sixteenth century, notably at Lyons Fair, exchange rates were fixed. A work to be consulted on this point is the *Essai historique sur les Marchés et les Foires*, by P. HUVELIN (Thesis, Paris, 1897, which has become a classic where this matter is concerned), Chap. 19, p. 552 *et seq.* See also the equally classic work by RICHARD EHRENBERG, *Das Zeitalter der Fugger*, and an important article by A.-E. SAYOUS, *Les Changes de l'Espagne sur l'Amérique au XVI Siècle* (Revue d'Econ. Polit., November-December 1927). The writer of this article shows how exchange operations were at that time combined with credit operations.

International payments are also effected wherever possible by offsetting. But here *the offsetting takes the form of the negotiation of bills of exchange.* Thus, a Genoese trader who has sold goods to another trader at Lyons has a claim on Lyons for the value of the goods supplied. He draws a bill of exchange on his debtor for the amount in question. If he finds in his own town, Genoa, another trader who has to send a similar amount to Lyons, he offers his bill of exchange to him; the latter pays him the money and then sends the bill to his own creditor – who will in turn obtain payment from the Lyons debtor of the first Genoese trader. In this way an offsetting operation will have taken place for the amount of the bill of exchange, and instead of the foreign currency being moved backwards and forwards twice, *two payments have been made in one town in the currency of the country.*

For the general operation of a system of offsetting by the negotiation of bills of exchange two conditions must be fulfilled: firstly, the holders of drafts on foreign countries must be in touch with traders in their own centre who have to make payments to a foreign centre; secondly, the means of payment represented by the total of drafts available can be placed at the disposal of every debtor of a foreign country in proportion to his requirements.

These conditions are provided, as far as possible, *by the intervention of the banks in international payments.* The banks, by becoming buyers and sellers of bills of exchange on foreign countries, create an exchange market on which demand and supply are co-ordinated.[1] On the other hand, all banks which undertake exchange operations have correspondents in all the foreign towns with which they do business, and by this means it is possible to sort out the operations so that they can be executed more smoothly and efficiently.

Our banker buys bills drawn on foreign countries by persons resident in his own country who have claims on foreign centres; instead, however, of reselling them to debtors in the same centre who require them to discharge their debts, he assembles them and sends them to his correspondent for the latter to collect. Having thus acquired a credit with his foreign colleague equal to the total of the drafts which he has sent him for collection, he in turn provides his clients with *bills of exchange, cheques or telegraphic transfers for an amount exactly equal to the debt which each one has to pay,* payable by the correspondent.

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[1] In France rates of exchange are quoted on the bourse by *bill-brokers*, but nowadays their functions are confined to this activity: they are bankers who buy and sell drafts on foreign countries for their own account.

It follows that any person who wishes to collect the amount of a draft on a foreign centre can *obtain direct payment in his own town* by selling it to a bank; and anyone who has to pay a debt to a foreign country can ask his bank for a draft, cheque or transfer payable by its correspondents, and *remit* it to his creditor, *who will obtain payment on the spot.*

There is a *regular market* for bills of exchange, drafts, and foreign bills negotiated in this way for the purpose of facilitating foreign payments, and they are *quoted on the Exchange.* In Paris, for instance, a draft expressed in Swiss francs is quoted in French francs. It must be clearly realized that the rate of exchange so quoted *does not represent an abstract ratio of value between the two currencies;* the Swiss bill quoted in Paris is a draft *enabling a certain amount of Swiss francs to be made available in a Swiss town.* If the buyer of the bill has to make over the amount to Switzerland, the rate represents, to him, Swiss francs deliverable on the spot. If, on the other hand, the person who buys it – a banker, in this instance – has no transfer to make to Switzerland, the same draft represents to him a clearly defined value in a sound foreign currency, but he will only be able to recover the equivalent amount of French currency *less any costs which its recovery may entail.*

In this way, *in so far as reciprocal payment requirements exist,* the negotiation of bills of exchange obviates the necessity for the transport of coin, reminting, etc. *It can be of service both to the seller and the purchaser of the foreign bill,* since the *seller* is paid at once in his own currency *in his own town,* and the buyer can send it as if it were an ordinary bill of exchange to his *foreign* creditor, who will obtain payment *in his own currency in his own town.* But the *service rendered* only exists where the person who has a payment to make or a debt to collect is *spared the necessity of having to transport coin.* And its value is *greater or smaller* in proportion as the necessity for doing so is *more or less remote.* It is clear, then, that the price paid for the negotiation of bills of exchange, i.e. the exchange *rate,* must *vary.*

If, for instance, at one particular moment the Swiss bills offered on the Paris market are insufficient to meet the requirements for payments to Switzerland – the position arises when France owes more to Switzerland than Switzerland owes her, or, in other words, when the balance of payments[1] is adverse to France – the rate of the Swiss franc in Paris will rise: it will fall when the opposite is the case.

§2. Technique of Foreign exchange operations.[2] Drafts and Remittances. Parities and Arbitrage

Having set out the fundamental principles which govern international payments, we must now proceed to study the exchange market in greater detail and endeavour to understand its working.

The traditional foreign-exchange instrument on which the rates are based is a *bill of exchange* payable in a foreign centre in the currency of the country where the centre is situated. The quotation is expressed in a certain number of units, usually 100: thus Paris quotes the rate for 100 florins, 100 marks, etc., and, as an exception, for one pound.

Such a bill of exchange is payable either *at sight* or at a certain *maturity date.*

But quotations often include *telegraphic transfers* obtained from the banks by persons desirous of making a payment to a foreign town. Such transfers represent sums of money which are *immediately available* at the town in question, and it is on this account that many currencies are quoted nowadays on this basis.

On certain markets, *long paper* – at three months, for instance – is quoted separately. Where it is not specially quoted, its value in the currency of the purchaser, i.e. the domestic currency, is established by deducting interest up to the date of maturity, calculated on a basis of the *discount rate on the market where it is to be collected.*

The rates for foreign bills may be *quoted in domestic currency* like the prices of commodities. In Paris, for instance, foreign bills are quoted in francs. But on some markets, on the contrary, the quotation shows the number of units of *foreign currency* which can be obtained in exchange for the domestic unit. Thus the London market quotes the number of francs corresponding to £1, or, in other words, the price of the pound in francs.

In the first instance we say in cambist language that the market *offers uncertain* – i.e. the quotation is based on the *variable* number of domestic monetary units required for the purchase of the foreign bill – or that it *bids certain.*

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[1] For the definition of this expression, see BERTRAND NOGARO, *Cours d'Economie Politique*, 4th Ed., Vol. 2, p. 305.

[2] Works which can be usefully consulted for information on this subject, apart from GOSCHEN's famous *Theory of the Foreign Exchanges*, are ARNAUNÉ's book (now otherwise somewhat out of date) *La Monnaie, le Crédit et le Change*, and PAUL REBOUD's *Essai sur les Changes étrangers*. Interesting theories are developed on more specialized subjects in recent works, notably *Le Change manuel* and *De la Monnaie à l'Economie française*, by P. B. VIGREUX, *Le Marché à Terme des Changes en France*, by CASAMAJOR (Th. Paris, 1924), *Le Marché des Changes de Paris*, by LOCKART, and *The Theory of Forward Exchange*, by P. EINZIG.

In the second instance we say that it *offers certain and bids uncertain.*

Hence, when foreign currencies are quoted in the domestic currency, the rate of exchange *rises* when the value of the domestic currency relatively to the foreign currency is *reduced*; if the contrary happens, it falls. The cases are reversed when it is the domestic currency which is quoted in foreign currency.

The expressions 'the exchange is rising' or 'the exchange is falling' without reference to the method of quotation should be consequently avoided.

Offsetting operations by the negotiation of bills of exchange presuppose that a *draft* drawn in the domestic market on a foreign market by a creditor of a foreign country is *sold* on the former market to a debtor of the foreign country, who *remits* it to his creditor. We have noticed that draft and remittance are two *complementary* operations. But if we look at the position from the standpoint of the person who has to make a payment to a foreign country, we find that he has *two courses open to him*: either he can let his foreign creditor draw a draft on him, which the creditor will negotiate in order to obtain payment – this is the *draft* procedure – or he can himself buy on his own market a draft drawn on his creditor's market and send it, i.e. remit, to him – this is the *remittance* procedure.

In the first case, the rate at which one currency is converted into the other will correspond to the *price of the domestic currency on the foreign market*; in the second, it will correspond to the price of the foreign currency on the *domestic market.*

The two prices can be easily compared. When one of the centres concerned quotes uncertain and the other certain, a comparison of the two quotations is immediately obtainable. The franc and sterling exchanges are cases in point, since both markets quote sterling in francs.

It is therefore possible to ascertain at a glance whether the rates are identical or whether they are divergent, and to what extent.

When they are identical they are said to be *at par.*

When both the markets quote uncertain or certain, an elementary arithmetical calculation will enable the two prices to be compared. Thus, in Paris the dollar is quoted in francs and in New York the franc is quoted in dollars, i.e. both Paris and New York quote uncertain. The rates are, moreover, usually quoted on the basis of 100 francs and 100 dollars.

It follows that if \$100 are worth 2,480 francs in Paris and 100 francs are worth \$4 in New York, then \$100 in New York are worth $\frac{100\times 100}{4}$ =2,500 francs.

In this case, since the dollar is cheaper in Paris than in New York, it is to the debtor's interest to discharge his obligation by buying dollars in Paris; that is, by adopting the remittance procedure.

Such, at least, is the typical and theoretical description of what takes place.

In practice, a trader who has to make a payment to a foreign country goes to a banker, who provides him with the foreign bill he requires, covering himself by the method he considers to be most suitable.

There are also bankers – arbitrageurs – who specialize in international payments and who follow up the exchange rates on the various markets not only from day to day, but from minute to minute.

Every such banker has a correspondent buying or selling for his account on every market. When, for instance, the dollar is momentarily cheaper in Paris than in New York, the Paris banker buys dollars – or in other words he sells francs – in Paris and has dollars sold – or francs bought – in New York. This is an arbitrage transaction. When made with the necessary speed – for rates change very quickly – operations of this kind are profitable. But the prospect of profit creates a demand for dollars where the dollar rate is low and a supply of dollars where the dollar rate is high, *and this operation tends to equalize the rates on the two markets concerned.*

The differences in the rates on the two markets are so small and change so rapidly that only experts can profit by them.

Multilateral settlements and indirect arbitrage. The foreign-exchange offsetting mechanism operates not only between two markets, but between several. For the purpose of making a payment from Paris to Berlin a draft on Berlin for the amount to be remitted may be purchased not in Paris, but say in Amsterdam. This is done if the bills drawn by Paris are not sufficient to pay all Paris's debts to Berlin when, at the same moment, Amsterdam has a surplus of claims on Berlin and Paris a surplus of claims on Amsterdam. These surpluses generally mean divergences in the rates which make the indirect settlement profitable, and indeed naturally give rise to it. Here again it is the arbitrage banks who intervene by carrying out *indirect arbitrage transactions.*

The banks do not confine their activities to equalizing the exchange rates between the different markets; they also frequently intervene for the purpose of regulating them as regards time. As a result of the various commercial and financial transactions in which it is engaged, one centre may find itself at one time with a surplus of debts and at another time with a surplus of claims on foreign centres, and it is often possible to foresee these variations. Thus, a particular country will have a large surplus of claims at the season when it exports its crops, whereas at other times of the year it is usually in deficit. To remedy this state of affairs the correspondents of a bank of the centre which is temporarily indebted will then open credits for it, authorizing it to draw on them during the periods of indebtedness, subject to reciprocal facilities being granted should this become necessary.

On the other hand, the banks in a centre which is momentarily indebted have a means at hand whereby they can postpone the presentation of a part of the long-term drafts drawn by foreign creditors: they can increase their discount rate. If the foreign drawers of the drafts wish to receive their money in advance they will have them discounted in their own centre, but their banks will keep them until maturity to avoid the trouble and expense of rediscounting.

Furthermore, the raising of the discount rate in one centre has the effect not only of postponing the maturity of certain collections to be made abroad, but also of *attracting liquid funds temporarily from abroad*; for bankers elsewhere may transmit part of their liquid funds to the debtor town in order to take advantage of the high discount rate, and their intervention tends to restore the equilibrium of the exchange.

It is generally the bank of issue which, by virtue of its monetary functions, is the first to raise its discount rate; for if it becomes necessary to export precious metal, its reserve is the first to be depleted; and the other banks are obliged in principle to follow suit, because, if they were exposed to the necessity of having their paper rediscounted, they would run the risk of losing the difference between their own discount rate, if it were lower, and that of the bank of issue.

But the attraction of funds from abroad by a higher discount rate is only possible if the exchanges are *stable*, as otherwise the loss resulting from the repatriation of the sums exported might be greatly in excess of the profit derived from a favourable rate of interest.

§3. Exchange rates between countries having the same metallic currency: the gold points

Countries with the same monetary system. It is possible for different states to adopt the same currency system, and coins minted in one country may even be accepted in the others. This was done by the countries belonging to the *Latin Union.*

It might seem at first sight that in these circumstances no problem of foreign payments would arise between the various countries concerned. But the transport of coin, even when no reminting is involved, remains costly. On the other hand, as there is no one bank of issue operating over the whole of the territory concerned, payments from one centre to another cannot be made without recourse to the exchange market.

The position of countries which have the same currency system, and even a common metallic circulation, is therefore not essentially different from that of countries which merely share a common 'currency standard', i.e. who make use of the same metal, which can be freely exported, imported and coined.

Countries having a common metallic standard: the gold points. Countries which use the same metal for settling their accounts, even though it may have to be recoined, are assured in all circumstances of a stable basis on which to liquidate their exchange transactions: this is the metallic par.

Since in this case bills of exchange are only negotiated, so far as private persons are concerned, in order to obviate the expense of transporting specie, it is evident that the exchange rate must have an *upward limit corresponding to the cost of consigning the precious metal to a foreign country*, and a *minimum limit corresponding to the cost entailed by having the metal shipped from abroad.*

In actual fact, two currencies made of the same metal have a ratio of value which is far from being an arbitrary one, determined by their respective contents of fine metal. This is known as the mint par. When in 1913, for instance, the pound sterling was said to be worth fr. 25·221, what was meant was that there was as much fine gold in £1 as in fr. 25·221; similarly, when in 1928 it was said that the Swiss franc was worth fr. 4·92 in new French francs, this meant that there was as much fine gold in fr. 4·92 as in one Swiss franc.[1]

Hence, if, having to make a payment from France to Switzerland in gold specie, we added to the par value of the Swiss franc in French money the cost of transport, insurance, melting (should this arise), and other miscellaneous charges, the total thus arrived at would give us what is termed the gold export point,[2] and it would be this gold export affairs the correspondents of a bank of the centre which is temporarily indebted will then open credits for it, authorizing it to draw on them during the periods of indebtedness, subject to reciprocal facilities being granted should this become necessary.

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[1] A convenient method of ascertaining the par value is to calculate the number of each of the monetary units which corresponds to one kilogramme of fine gold. Thus, 1 kilogramme of fine gold is equal in pounds sterling to 136·568 units, in marks to 2,790 units, and in old francs to 3,444·44 units. Consequently, if 136·568 sovereigns are worth 3,444·44 francs, 1 sovereign is worth $\frac{3{,}444{\cdot}44}{136{\cdot}568} = \text{fr. } 25{\cdot}221$. When we know the parity of one currency in terms of another it is, moreover, quite easy to calculate the reciprocal parity. Thus, as 1 mark is worth 1·2346 old francs, 1 franc must be equal to $\frac{1 \text{ mark}}{1{\cdot}2346} = \text{mk. } 0{\cdot}81$. Conversely, given that 1 franc=mk. 0·81, 1 mark must be equal to $\frac{1 \text{franc}}{0{\cdot}81} = 1{\cdot}2346$.

[2] The gold point is clearly defined at any given moment. It is not absolutely the same, however, at all times. If the shipment consists of gold bars, which travel better than specie, the gold point will be lower. Similarly, when coins of the country of origin are shipped, these require no reminting, and the gold point may be lowered on this account. On the other hand, however, the cost of insurance may go up, or when large consignments of gold are being made shipping space may be scarce, which would mean an increase in freight rates and a loss of interest on the capital thus immobilized, with a consequent rise in the gold point. In 1914 the gold import point for the pound in Paris was 25·12½, and the gold export point 25·34½.

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[1] A convenient method of ascertaining the par value is to calculate the number of each of the monetary units which corresponds to one kilogramme of fine gold. Thus, 1 kilogramme of fine gold is equal in pounds sterling to 136·568 units, in marks to 2,790 units, and in old francs to 3,444·44 units. Consequently, if 136·568 sovereigns are worth 3,444·44 francs, 1 sovereign is worth $\frac{3{,}444{\cdot}44}{136{\cdot}568} = \text{fr. } 25{\cdot}221$. When we know the parity of one currency in terms of another it is, moreover, quite easy to calculate the reciprocal parity. Thus, as 1 mark is worth 1·2346 old francs, 1 franc must be equal to $\frac{1 \text{ mark}}{1{\cdot}2346} = \text{mk. } 0{\cdot}81$. Conversely, given that 1 franc=mk. 0·81, 1 mark must be equal to $\frac{1 \text{franc}}{0{\cdot}81} = 1{\cdot}2346$.

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By deducting similar costs from the price corresponding to the par value of the two currencies we get the *minimum limit* of the exchange, or the gold import point.

The same principle applies to two or more countries where silver can be freely coined and between which it is freely exportable and importable.

The rate of exchange, which moves between the two limits corresponding to the cost of shipping metal in either direction plus the possible cost of reminting, approaches one or the other of the limits as the shipment of metal becomes *more or less imminent*, in proportion, that is, as the excess of debts over claims, or of claims over debts, tends to be greater or smaller.

On the other hand, the rate of exchange approaches *par*, and eventually reaches it, as the total of *debts and the total of claims* become more equal and then actually *balance*, which means that the *demand for drafts on the market matches the supply*. In this case the mutual services rendered by creditors and debtors of foreign countries are equal and offset one another exactly.

In short, the rate of exchange between countries which have the same metallic standard is contained within the narrow limits constituted by the cost of shipping metal, whatever this may be. The exchange is therefore stable.[1]

Within these limits it varies according as demand exceeds supply, or as supply exceeds demand; and as the bills of exchange on offer result from claims to be collected in foreign countries, whereas the demand for them results from debts to be paid in foreign countries, we can conclude by saying that where there is a common metallic currency, *the rate of exchange depends on the ratio between the whole of the claims and the whole of the debts of a given country in respect of other countries* – or, to be more precise, between claims outstanding and debts due at the moment under consideration.

§4. Exchange rates between countries which have no common currency

The problem is very different when the countries concerned have no common currency (or when the currency cannot be freely exported or imported). Each country, of course, draws bills of exchange on the other countries. But these are not negotiated on the same terms, for when exchange settlements become impossible, there is no common means of payment. We will consider in turn the two most important hypothetical examples of this, namely that of silver-currency countries in their relations with gold-currency countries, and that of countries with paper currencies.

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[1] We see from this that a 'stable' exchange does not mean a 'fixed' exchange, for stability is compatible with limited fluctuations such as those resulting from the operation of the gold points.

Payments between silver-currency and gold-currency countries. Here two cases present themselves for our consideration. The first of these is mainly of historical interest, but the theoretical interest attaching to it is too great to pass over in silence.

(a) *Where bimetallist countries (properly so-called) exist.* The presence of bimetallist countries ensures the stability of exchanges between gold-monometallist and silver-monometallist countries. A bimetallist nation possesses the two currencies at the same time, and can settle its accounts on the basis of a common currency both with silver-currency and gold-currency countries: not only is such a country able if need be to transmit payments in either metal, but it can also, thanks to its double free coinage system, receive the foreign specie in payment, silver equally well with gold. Thus, as long as France accepted both metals for free coinage, she was just as well able to receive payment in Indian rupees or Mexican dollars as in British sovereigns, all these being equally convertible by reminting into French money, and the limits of the fluctuations of her exchanges lay in the gold import or export point or the silver import or export point as occasion demanded.

This stability of the exchanges of the bimetallist nations benefited the gold-monometallist and the silver-monometallist countries in their relations with one another. When France was on the double free coinage system Great Britain could obtain silver from France's monetary circulation when she needed it for her payments to countries which only accepted silver, by sending gold to France in exchange; conversely, she could obtain gold – the only metal which could be converted in England into the domestic currency – in exchange for the silver she had received from countries on the silver standard. A gold point and a silver point, either inward or outward, constituted the extreme limits of the exchanges between gold countries and silver countries.

(b) *In the absence of bimetallist countries.* When silver had ceased to be accepted for free coinage concurrently with gold by the nations which had formerly been bimetallist,[1] the silver-standard countries could no longer make use of silver as an intermediary in their payments to gold-currency countries. They could, of course, continue to export silver, but as silver was no longer accepted for free coinage, it was received like any ordinary commodity, and its price was essentially variable. Conversely, though the silver-standard countries continued to receive payments in silver coming from abroad, the foreign nations had to purchase their means of payment at a price which varied with the market.[1]

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[1] The free coinage of silver was suspended in 1873 in the bimetallist countries, which thus passed over to the system known as limping bimetallism – which, as we shall see below, is much more akin to the gold-standard system.

It will be seen that, on this hypothesis, the rate of exchange between gold-standard and silver-standard nations is governed by the rate of silver in terms of gold, *and follows its fluctuations more or less closely.* The rate only rises if the countries with a silver circulation cease to receive payment in foreign silver, and during periods when the balance of payments is favourable.[2]

(c) *Payments by paper-currency countries to countries having a gold or silver currency, and to other paper-currency countries.* Paper money properly so-called, that is to say, paper money which is inconvertible into metal, constitutes a monetary circulation which is both domestic and fiduciary. The notes, like coins, bear the stamp of the sovereign state which authorizes their issue, and are tender only within its territory. But unlike metallic money, they cannot be turned into foreign currency by reminting. And they have no commodity value apart from their monetary value, like silver, which retains its commodity value in countries which do not accept it for free coinage.

Notes which are legal or forced tender in their country of origin are therefore *strictly internal money.* They have no monetary value in other countries. If they are accepted by a banker or a money-changer in another country it is only in order to be repatriated to their country of origin. They will then be equivalent to first-class bills on that country. But they can never be a final means of payment in the same way as coins. Thus an Englishman on a visit to France gives a French banker or money-changer a £10 note. The latter takes it as he would take a cheque or a draft on London for the same amount, at the current rate of exchange, and he will in the same way obtain payment of the amount in London. The note will have become one more French claim on Great Britain, and will be included in the general payment mechanism described above; if France should be in debit, it will have played its part in the offsetting operation by increasing her claims by the amount in question; should France have a surplus of claims on Great Britain at that particular moment, it will have increased by a similar amount the total due to be collected and returned; far from contributing to the payment of the British debt, it will have increased the balance to be paid.

[1] Before 1914 the commercial price of silver had, in fact, sunk to a level which was less by about half than the price at which it had previously been accepted by the mints; it corresponded to a ratio of approximately 1 to 32 as between gold and silver, instead of 1 to 15·5. Since then it has risen at times to prices which have reached or exceeded its former parity, but it has been subject to violent fluctuations.

[2] This was the case in Indo-China before the stabilization of the piastre.

Thus a country which has a paper-currency system has no common currency either with gold-currency or with silver-currency countries or even with other paper-currency countries.

Once we have got this clearly in our minds we can proceed to study the problem of the external payments of paper-currency countries, first looking at two separate hypothetical cases.

First example: when there is a surplus of external debts to be liquidated. The only course open to a person resident in a paper-currency country who has to make a payment to a foreign country is to buy a bill payable in a foreign currency. He cannot say to his seller: 'If the rate is over such and such a limit I prefer to adopt the other means of payment, bullion', since we are assuming that he has no metallic money at his disposal. The rate of exchange therefore varies unrestrictedly[1] in a downward direction. In France, for example, the sterling rate advanced progressively from 25·22 francs to 240 francs under the forced-currency régime between 1914 and 1926; and even this is a very moderate exchange loss compared with the fantastic losses experienced in some other countries.[2]

Second example: where the paper-currency country has a surplus of claims on foreign countries. Its position would appear to be much more favourable in this case, and indeed the bills of exchange drawn by this country on other countries should, in principle, amply suffice to offset its debts. If, moreover, foreign gold is not accepted at a fixed rate, the exchange may, also in principle, rise indefinitely. It therefore remains unstable; but it can, on this hypothesis, vary just as well in an upward direction as in a downward one,[3] and it does not appear, *a priori*, to be in any particular danger of falling.

Even in this case, however, the exchange rate depreciates more often than not. When we speak in this connexion of a surplus of claims, we refer to the whole of a given accounting period, possibly a year. But there may be times during this period when the inhabitants of the country in question have a surplus of debts to be liquidated – debts having to be paid all the year round – and as at such times they have no gold at their disposal, they feel the lack of external currency. As the impossibility of sending cash has caused the gold export point to vanish, holders of drafts can demand from debtors of foreign countries premiums which are exorbitant compared with the existing legal parity between the local currency and gold. Furthermore, such an eventuality may be foreseen and pounced on by speculators, who buy up bills of exchange on foreign countries at periods when there is a surplus of exports and hold them to resell when there is a balance to be liquidated abroad.

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[1] For the theories which claim to discover a limit to the exchange fluctuations in cases such as this, see below, Part II, Chap. III, §4.

[2] See below, Part II, Chap. III, §3.

[3] In practice, however, the rise is not generally unlimited. Paper-currency systems result as a rule from the institution of a forced currency, which releases the issuing bank from providing metal, unit for unit, in exchange for notes. But though the putting into operation of a forced currency is normally accompanied by an embargo on the export of the precious metal, it does not imply either an embargo on its import, or the suppression of free coinage or an equivalent system. It therefore does away with the outgoing gold point, but not with the incoming gold point.

Thus, even when a country with an inconvertible paper currency has a balance of payments which is normally favourable, its exchange cannot be stable unless it has a regulating organization which forestalls speculation and collects the drafts issued during periods of credit in order to resell them at a fixed rate during periods of indebtedness.

§5. Exchange rates between countries which have mutually convertible currencies

Measures for equalizing exchanges: foreign bill holdings, foreign assets, external credits. In the example we have just studied we can nevertheless see a possible means whereby stability of exchange can be secured in a country which has only an essentially domestic and fiduciary monetary circulation, a circulation, that is, which is strictly internal. If the exchanges with foreign countries are in equilibrium, the system of international settlements provided by the mechanism of the exchange market should suffice to facilitate such payments, and by adjusting supply to demand it should be possible to regulate the rate of exchange. If equilibrium is delayed, advantage may be taken of a moment when there is a surplus of bills on offer to hold the surplus bills in the form of a reserve, thus constituting a *portfolio of foreign bills*, which will be resold in due course by the central organization which purchased them. Bills of exchange formerly bought up by speculators to be sold at a profit, thus causing a rise in the foreign bill rate and a corresponding fall of the domestic currency, will now be centralized, to be *resold* at the price at which they were purchased, and the exchange market will be stabilized.

It is also possible in practice, instead of keeping the bills, to collect the amount of such bills and have it credited to an account with a foreign bank. In this way foreign assets are built up, thanks to which other drafts can subsequently be issued and placed on the exchange market when the time is ripe.

Again, it is possible to tide over a period of deficit by obtaining an *external credit* against which drafts can be drawn in the same way.

Organizations for the centralization of foreign bills: exchange offices, etc. It is clear from the foregoing that the exchange of a paper-currency country can be stabilized if there is a *centralizing organization*, either connected with the bank of issue or independent of it, which *buys surplus* *bills of exchange at a fixed rate and supplies official drafts at the same or approximately the same rate* when commercial drafts are insufficient.

An Exchange Office of this kind was established at Manila in 1904. Working in liaison with a corresponding organization in New York, it ensured stability of exchange between the Philippines and the United States. This Exchange Office functioned on the same lines as the Argentine Conversion Office, except that it supplied and received drafts or bills instead of receiving and supplying gold.

The sale of official drafts at fixed prices has the same effect as the facility of using gold: it prevents the rate for private drafts expressed in foreign currencies from rising when demand is in excess of supply, by providing foreign debtors with an alternative means of payment. Conversely, when there is a surplus of private drafts, their purchase at a fixed rate makes it unnecessary for the sellers to part with them at a loss.

Consequently, the purchase and sale of bills of exchange at a fixed price acts here as a substitute for the gold points. The rate of exchange may even in this case be more stable, and it can become absolutely stationary at the legal parity if the purchase price and the selling price fixed by the central organization are identical. But a small margin is generally maintained between them so as to allow the exchange rate to fluctuate within limits similar to those provided by the gold points.

A mechanism such as this has the ultimate effect of making a paper currency which is inconvertible into metal *constantly convertible in exchange operations with foreign countries.* Through its agency the domestic currency becomes *directly and reciprocally convertible* into another domestic currency (whether fiduciary or not), and stability of exchanges is ensured without recourse to the intermediary of gold.

It cannot, of course, come into operation unless the country's balance of payments is favourable or in equilibrium, or at the very outside when a deficit is warded off by the obtaining of an external credit; but it must be realized that, if external credits are scarce, gold stocks are still scarcer in many countries. Accordingly, this system was widely adopted after the 1914-1918 war[1] for the purpose of stabilizing the exchanges.

Exchange equalization funds. From the end of 1931, when she abandoned the gold standard, Great Britain, in the absence of a system of rigid convertibility such as that described above, was led to adopt a system of permanent intervention on the exchange market, whereby violent fluctuations in the exchange rates were prevented without the centralizing institution being compelled to buy or sell foreign exchange at a fixed price. By this means the rate of exchange can be controlled and simultaneously guided gradually upwards or downwards. Such has been the function of the British Exchange Equalization Fund,[1] which guided the rate of sterling *vis-à-vis* the dollar and the franc while a number of other currencies supported by the London finance market remained pegged to sterling. This method, which is equivalent to a *managed-currency* policy, actually puts into operation a *system of flexible convertibility* which is much closer to the system of regular convertibility than to a paper-currency system properly so-called, with its attendant risk of unlimited exchange fluctuations.

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[1] As we have already stated, this system of convertibility not into metal but into foreign exchange, or in other words into other foreign currencies, which may not themselves be at par with gold, has been called by certain writers 'the gold exchange standard', though this name originally denoted the monetary system of India, which was characterized by convertibility into gold for external exchanges. This confusion in terminology is to be deplored.

§6. Exchange control

In view of the vital importance of avoiding inordinately wide fluctuations and the risk of a depreciation of their exchanges, certain countries which had only fiduciary and bank money at their disposal and had neither a naturally adjusted balance of payments nor any prospect of obtaining sufficient external credits to enable them to await a possible return to equilibrium, found themselves forced to seek, and did in the end discover, an alternative method of maintaining the stability of their exchanges.

It will be realized from what has been said above that action of this kind is inevitably based on one simple principle; in order to achieve stability of exchange in the absence of foreign bill holdings and external credits, *complete equilibrium must be achieved between supply and demand on the exchange market*; and as the amount of the bills which form the object of the supply and the demand depends on the amount of foreign claims and foreign debts, or in other words on the surplus or the deficit on international payments, it is the *balance of payments* which must be brought into equilibrium.

We see at once that although the principle itself is quite simple, its application is very complicated, inasmuch as the organization of the exchange market on lines designed to bring it into perfect equilibrium implies an overall control of exchanges with foreign countries (imports and exports, financial operations, incoming and outgoing movements of people, etc.).

The system of *exchange control* is at once very similar to and very different from that of the traditional exchange market.

It is *very similar* in that it is based on exactly the same *principle of*

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[1] See P. B. VIGREUX, *Le Fonds Britannique d'Egalisation des Changes*, Revue d'Econ. Polit., 1935, and CH. RIST, *Les Fonds d'Egalisation des Changes*, Revue d'Econ. Polit., 1938.

offsetting, which is, moreover, carried to its extreme: the creditor of a foreign country – let us for the sake of simplicity call him the exporter – draws a draft on his debtor and sells it. The draft is sent to a debtor of a foreign country – let us call him simply an importer – who buys it and sends it to his creditor, and so forth.

And yet *very different*. For the draft, instead of being sold on a free market at a more or less fluctuating rate, has to be sold to an *official organization* such as an exchange office or a clearing organization which *buys* it *at a fixed price*; at a price, that is, which corresponds to the exchange parity fixed by the authorities. And it is this exchange office which assembles the drafts drawn by exporters and supplies the importers with foreign exchange for their payments.

The exchange fixed in this way by the official authority is consequently stable. But to ensure compliance with the decisions of the authority the latter must be able to supply *all the exchange which is required* for external payments, and *it must not allow a free market of any size to be constituted abroad.*

Under a system of free exchanges there are normally two markets which are the counterparts of one another; there is a sterling market in Paris, for instance, and a corresponding franc market in London; the sterling rate in Paris and the franc rate in London react on one another, and arbitrage operations tend constantly to equalize them. If, therefore, the controlling authority wishes to secure a fixed exchange it must not only have control over its own market, but must eliminate the corresponding foreign market. This object is achieved under a system of controlled exchanges by *prohibiting importers from allowing their foreign creditors to draw on them* drafts which could be negotiated by the latter on their own exchange market. The importer is obliged to make use of the *remittance* procedure.[1] This means that the *initiative for the settlement* must come from the exporters of his own country, who draw drafts on their debtors and sell them to the official exchange office, which resells them to the debtors of foreign countries so that they can effect the remittance to their sellers. By this means the external exchange market is eliminated.

On the other hand, we have said that the drafts on the official domestic exchange market drawn by creditors of foreign countries must be sufficient to guarantee the payments of the debtors of foreign countries. In other words, the official exchange market must be in equilibrium. If this is to be achieved it is obviously necessary *to control all exchange operations with foreign countries.*

But even admitting that equilibrium can be achieved over a longish period such as a year, there must inevitably be times when the available drafts are not sufficient to meet the demand on the part of the debtors of foreign countries. When this occurs on a free market, the rate in the domestic currency of drafts payable abroad in foreign currencies rises. Under a system of exchange control a *waiting period* is substituted for the pressure otherwise exerted on the market. The foreign creditors are listed in chronological order and have to wait for their payments until equilibrium is restored between debts and claims on foreign countries.[1]

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[1] See above, p. 46.

The system of *exchange control* thus interpreted has solved the problem of exchange stability for those countries which have had cause to put it into operation. It was in particular adopted quite systematically in Germany, where it developed in the manner described above into what was really a perfectly rational currency system. A very similar system was also established in France.[2]

In contrast to this system of total control, which has been called 'rigid' exchange control, there is a much more flexible system which is applied in numerous countries, notably in South America. The principle on which it works is that part of the drafts drawn by exporters are handed in to an official organization, which buys the drafts from the exporters and resells them at a fixed price. But it is only the importers of products which are needed by the countries concerned, and whose prices it is desired to prevent from rising, who benefit by such drafts for their foreign payments. Where other payments are concerned the importers obtain their foreign exchange on the free market.[3]

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[1] The foreign countries have sometimes retaliated by seeing to it that their own exporters also obtain payment from the importers of goods emanating from any country whose exchange was controlled. This state of affairs has given rise to *clearing agreements*. The best works to be consulted on this point are *L'Enquête sur les Accords de Clearing* (published by the League of Nations, Geneva, 1935) and an excellent article by J. DUBOIS, *Considérations générales sur les Accords de Clearing*, in the Revue Econ. Intern., July 1935.

[2] See A. PIATIER, *Le Contrôle des Devises dans l'Economie du troisième Reich*, and *Le Contrôle des Changes en France*.

[3] See R. TRAUB, *Le Contrôle des Changes*, th. Paris, 1938, and C. A. SIENRA, *Les Restrictions monétaires et les divers Régimes d'Avoirs à l'Etranger*, th. Paris, 1936.

PART II

THE HISTORY OF MONEY

CHAPTER I

METALLIC MONEY UP TO THE END OF THE NINETEENTH CENTURY

§1. Metallic money under the *ancien régime*[1]

Before we proceed to describe the way in which our modern monetary systems came into being, we must first cast a brief glance at the circumstances which led up to them. It is no light matter, indeed, to define a monetary régime which was in course of evolution in the various countries of Europe, through countless vicissitudes, from the depth of the Middle Ages until the end of the eighteenth century. An attempt can, however, be made to sum up its salient features.

It must first be observed that we are only concerned here with *metallic money*. The paper notes issued by the banks only made their appearance at the end of the period we are considering, and they were not money: they were simply *promises to pay in money*,[2] temporarily acting as media of exchange. The incidents to which their issue gave rise can also be regarded as isolated episodes.

As for the rest, this was *coined* money, mainly gold and silver. But the conditions under which it was coined were entirely different from what they were to become in our own times. The right to coin money was certainly the prerogative of the supreme authority. But in many countries this authority was very widely distributed. There were many princelings and small republics minting coins of varying kinds and contents which circulated concurrently with foreign coins.

Precious metals were purchased for this purpose from private persons or money-changers at *prices which were more or less divergent in space and variable in time.*[1]

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[1] Where this paragraph is concerned, the following works may be usefully consulted:

Early works: BOUTTEROÜE, *Recherches curieuses sur les Monnaies de France*, 1566; LE BLANC, *Traité historique des Monnaies de France*, 1689; BOIZARD, *Traité des Monnaies*, 1696; ABOT DE BAZINGHEN, *Traité des Monnaies*, 1764, and *Tableau des Monnaies*; DUPRÉ DE SAINT-MAUR, *Essai sur les Monnaies*, 1764; GALIANI, *Della Moneta*, 1750.

Contemporary works: MESSEDAGLIA, *La Moneta e il Sistema monetario in generale*, Chap. 7; G. SCHMOLLER, *Principes d'Economie politique*, Vol. 3; A. LANDRY, *Essai économique sur les Mutations des Monnaies de Philippe le Bel à Charles VII*; A. BLANCHET and A. DIEUDONNÉ, *Manuel de Numismatique française*, 2 vol. See also an important article by LUIGI EINAUDI, *Teoria della Moneta imaginaria del tempo da Carlomagno alla Rivoluzione francese*, in the *Rivista di Storia economica*, 1936, pp. 1-35.

[2] This idea accords with the actual wording shown on the notes issued by Law's Bank, for example.

In addition, a coinage fee or seigniorage was generally charged. This resulted from the difference between the number of monetary units represented by the coins struck from the bullion and the purchase price of the bullion itself.[2] Furthermore, it sometimes happened that the sovereign in his desire to augment the stock of money tried to attract precious metals by means of a premium or 'surachapt', which reduced the amount of the seigniorage correspondingly. He sometimes even assumed the cost of manufacturing.[3] But except in England, where the charge for coinage was abolished in 1667, this would only appear to have been done in exceptional cases.[4]

It should be pointed out, however, that in certain countries the sovereign did not make an actual charge for coinage, but recovered it indirectly by *reducing the weight of fine metal contained in the specie when it was melted down.*[1]

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[1] Thus in France the Edict of January 1726, which tended incidentally to standardize the currency system, fixed the price of a mark of fine gold at 561 livres, 5 sols, 5 deniers, and that of a mark of fine silver at 38 livres, 17 sols. The standard fineness of the gold louis was 22 carats (that is, 22 in 24, fine gold containing 24 carats), with an alloy remedy of 10/32. The tale was 30 to the mark – which means that 30 louis were struck from one mark – with a weight remedy of 15 grains per mark. For silver écus, the fineness was 11 deniers – or 11/12 – with a remedy of 3/24. The tale was 8-3/10 to the mark, with a remedy of 30 grains per mark. The Edicts of February and May of the same year altered the above purchase prices and manufacturing conditions. It should be remarked, however, that during the eighteenth century an endeavour was made to stabilize monetary systems. Thus in France the system which had been established in 1726 was not materially altered until 1785. Cf. DESROTOURS, *Observations sur la Déclaration du 30 octobre 1785*, Paris, 1787.

[2] The seigniorage thus resulted partly from the systematic utilization of tolerances of alloy and weight by the heads of the mints. In this connexion DESROTOURS, in the work referred to above, admits that the louis which were coined in virtue of the Edict of January 1726 were manufactured at a fineness of 21-21/32 carats and the écus at a fineness of 10-21/24 deniers, and that the heads of the Mint allowed 9 grains of weight tolerance in the manufacture of a mark of louis and 18 grains in that of a mark of écus: which would mean 4,149 grains of fine gold to a mark of louis and 4,158 grains of fine silver to a mark of écus, bringing the seigniorage up to 92 louis, 8 sols for the former and 5 louis 11 sols 1 denier for the latter.

[3] Thus in France gold louis were minted in the reign of Louis XIII at the king's expense. See ABOT DE BAZINGHEN, op. cit., Vol. 2, p. 49.

[4] Nevertheless, there have even been cases of coins being manufactured at a loss. In France a decree passed on September 20th, 1729, offered 4 deniers per livre to all holders of bullion, whereby the purchase price of gold and silver was increased, with a corresponding reduction of the seigniorage. A decree of August 20th, 1755, increased the premium to 8 deniers. Finally, the Letters Patent of October 26th, 1759, returned the assaying fee paid by private persons on gold and silver plate brought to the royal mints, and remitted the payment of seigniorage. It has been calculated that purchase prices were increased to 861 livres 7 sols for a mark of fine gold, and to 59 livres 5 sols 10 deniers for a mark of fine silver, and that specie thus reached a price *higher than the official one*, i.e. 25 livres 18 sols 6 deniers for one louis – the official price being 24 livres – and 6 livres 10 sols 12 deniers for one écu, then officially quoted at 6 livres. But this was really a loan, and the loss, which was estimated to be 11-1/16 per cent, was added to the usual interest.

Systematic *recoinage* was also practised at times, the idea being to reduce the weight of the coin so that the ruler was able to put back into circulation more coins than had been withdrawn, though each coin of the reduced weight was given the same legal value as its predecessor. This was known as 'increasing the circulation'.[2]

Thus, coins which had subsisted over a period of time under the same denomination had *progressively lost a large part of their content of fine metal.*

Finally, *an essential feature of the monetary institutions* of the *ancien régime* was that *money of account* – in those days people used to talk about 'imaginary money' – *was very often dissociated from real money.* In France, in particular, from the time of Charlemagne down to the French Revolution, livres, sols, and deniers never ceased to be used as monetary units in accounts. Now, though the livres, sols, and deniers were originally real money, coins corresponding to these monetary units ceased to be struck after a comparatively short time,[3] and they were used simply as a basis for calculating the official prices of the real gold and silver coins, known under various names, of domestic and foreign origin.

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[1] G. SCHMOLLER (op. cit., p. 167) describes how, the deterioration of small coins being very rapid in Germany, they were reminted every year for the fairs, the owners being obliged to change thirteen old coins for twelve new ones. As the public appealed to be released from this obligation, it was decided to manufacture a 'perpetual Pfennig' sustained by the supreme authority. But as the authority reduced the weight of fine metal to cover its costs, the content of the coin became more and more reduced.

[2] Cf. A. LANDRY, op. cit. The jurists contended that it was for princes to fix the value of the coins: 'specie', POTHIER could still write at the end of the eighteenth century, 'only belongs to private persons in token of the value which the prince has desired it to represent'; from which he concluded that private persons were under the obligation to take their specie to the mint whenever the king ordered it to be recoined. This concept is based on the dissociation of money of account and real money, and ultimately leads to an attempt to maintain the value of the money of account when the real money to which it corresponds loses its weight. It is a concept which cannot easily gain currency in a country which does not constitute a closed economic unit, particularly when foreign coins circulate there, and it was abandoned at the end of the *ancien régime.* We shall see, however, that in certain circumstances the value of money of account has in our own times been made independent of the value of real metallic coin. See below, Part III. See also BERTRAND NOGARO, *Les Principes fondamentaux du Droit monétaire français.* Revue Trimestrielle de Droit Civil, 1930.

[3] According to LE BLANC, the livre was never minted, but it was worth 20 sols, and under Charlemagne silver sols were coined at a weight of twenty to one Roman livre of 12 ounces. But by Le Blanc's time – the end of the seventeenth century – the livre had only retained 2½ per cent of its original weight. Deniers were coined for a long time, and they were a real currency, but this did not necessarily imply that they were identical with the denier as a money of account. Deniers were ultimately coined from billon (an alloy of silver and copper, in which copper predominated) and even from copper. See A. LANDRY, op. cit., p. 11 *et seq.*

Hence the prices of commodities and services were fixed in livres, sols, and deniers, and such money of account was therefore *contract money*, but *payment money* was one of the real currencies whose value in livres, sols, and deniers was fixed by the authorities.

But it is not possible in practice to dissociate money of account from real money: once you have real money serving as a medium of exchange and payment and money of account serving as a measure of value, you have to know how many units of account each coin represents. And when you say that the price of a gold louis is officially fixed at 20 livres, you might just as well say that the 20 livres denotes the weight of fine metal contained in the gold louis. It was, moreover, on the basis of their respective weights of fine silver and gold that the relation between the unit of account represented by the livre in France and the English silver pound, or between the louis and the guinea, was determined. But the tariff prices fixed under the *ancien régime* did not constitute a *permanent* link between money of account and real money. They could be constantly altered.

The adoption of money of account as distinct from real money gave rise to monetary systems which were complicated but flexible. It enabled *foreign coins* to be taken into the circulation without previous reminting. It also enabled a *legal ratio to be fixed between the gold and silver pieces.* Lastly, it made possible what is nowadays called devaluation, or an increase in the legal value of a metallic currency, an operation which is obviously equivalent to a reduction of the weight of specie which is used both as money of account and real money, and it 'increases' the money in circulation without recoining.[1]

Difficulties were encountered, however, owing to the divergences and variations both in the official prices quoted for the money and in the purchase prices of the gold and silver material at the numerous mints.

For as long as official prices referred to one metal only, their establishment was everywhere governed by one simple rule: various coins of the same weight, or, more accurately, containing the same weight of fine metal, had the same value in money of account; and the value of coins containing different quantities of fine metal was proportionate to the quantity of metal which they contained. But when the metals were different ones the official price was an arbitrary one. The ruler of a country might decide that a gold louis was worth 20 livres and that a silver écu was worth 5. His decision enabled a legal ratio to be established between the two metals. But the ratio might differ in varying degree from the ratio adopted in various other countries. Thus the value of coins made of one metal minted in one country might be lower there than in other countries relatively to the other metal; they were then quoted by the money-changers in that country at prices higher than the official ones, and could be exported to a country where they were accepted on more favourable terms. In such a case the ruler of the first country might see fit to amend his tariffs and his purchase prices.[1]

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[1] In France the third Edict of 1726 – May 17th – suddenly raised the official price of the louis from 20 to 24 livres, and that of the écu from 5 to 6 livres, whereas the purchase prices of gold and silver were only slightly increased.

But as in every country the official quotations could be constantly altered, and reacted indefinitely on one another, the flexibility of a system which established only a precarious link between money of account and real money led in the end to *chronic and general monetary instability.* By the end of the *ancien régime* the conclusion had been reached that it was not within the power of the public authority to fix the value of money.

§2. The era of free coinage

One of the first tasks on the agenda of the Assemblies which emerged after the French Revolution was the inauguration of a new monetary system.[2] Various committees or commissions set to work. These bodies sought to discover the philosophy underlying an experiment which had lasted for centuries and to draw from it conclusions of practical value. Their members cherished the belief that it was useless to attempt to fix the prices of money, that gold and silver were commodities, and that when issuing coined money made from them the State should confine itself to checking and certifying the quantity and quality of the coins. And they would have liked it to confine itself, when placing the stamps on the little disk-shaped ingots, to stating their weight and fineness. The law of the month of Thermidor of the year III did put this into effect as far as gold coins were concerned. The law of the 7-17th Germinal of the year XI (March 28th-April 7th, 1803), in deference to the habits of the population, decided to mint gold and silver pieces stamped to indicate a certain number of monetary units. But the idea which was to inspire the new régime was that the coinage of money ought in future to be no more than *a purely physical transformation* of the gold and silver material brought in by private persons, who ought to receive from the mints a *weight of fine metal, in coin, equal to that of the bullion which they had handed in,* less a charge strictly limited to the cost of coinage.

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[1] It was circumstances such as these which led to an alteration in the legal ratio of value between gold and silver in France at the end of the eighteenth century. The ratio, calculated on the respective official quotations for the louis and the écu fixed by the Edict of May 27th, 1726 (24 and 6 livres respectively), and on the fine metal content of the coins, stood at about 1 to 14½ (exactly 1 to 14-456/996), and the ratio between the gold and silver contained in the coins resulting from the purchase price of the mints fluctuated round about the level of that corresponding to the official quotations of the coin. The *Declaration of October 30th, 1785*, altered this system. The content of fine metal in the louis was reduced, the tale being now 32 to the mark instead of 30. The purchase price was raised to 828 livres 12 sols to the fine mark (24 carats). The purchase price of a mark of silver fixed by the last governmental ruling (May 1773), i.e. 53 livres 9 sols 2 deniers, was maintained. Thus 'each mark of fine gold of 24 carats was worth *fifteen and a half marks* of fine silver of twelve deniers'. The *Declaration*, alluding to the speculation which was tending to export gold abroad, justified the decision taken in these words: 'The price of gold has been rising for some years in commerce. . . . As the proportion between the mark of gold and the mark of silver has remained the same in our Kingdom, it is now no longer related to that which has been successively adopted in other countries.' See *Isambert*, Vol. 28, p. 89.

[2] See the reports (1 and 2) of the Coinage Committee of the National Assembly (Paris, 1790), the memorandum of the Coinage Commission (1792), the first report of the Finance Minister (Gaudin) to the Councils on currency, and his second report (Paris, Printing Office of the Republic, year XI). See also CONDORCET, *Mémoire sur les Monnaies* (1790), MIRABEAU (RIQUETTI, COMTE DE), *Observations préliminaires sur le Rapport du Comité des Monnaies* (Paris, 1790), and DESROTOURS, *Observations sur le Mémoire de la Commission des Monnaies* (1792).

In general, the essential feature of the new monetary régime which resulted from the deliberations of the French Revolutionary Assemblies was the *system of free coinage.* It was indeed this system of free coinage, with its corollaries, which was to *dominate national monetary systems and international monetary relations during the whole of the nineteenth century and up to the 1914-1918 war.* Precedents were already to be found in England and the United States, but it was from the time of the French legislation of the Revolutionary period that it was to be given general application in Europe and in the world.

It is therefore important that its significance and scope should be clearly realized.

The system of free coinage or free minting as applied to either of the two precious metals, or to both at once, obviously means in the first place that any private person is entitled to hand in to the mint the metal accepted under such a system for the purpose of *having it coined.* But there is more to it than that: to have it coined is to have it *transformed* into specie, which means in principle that the actual bullion handed in is returned in the form of coined specie. It is therefore only logical that the transformation should be effected *weight for weight,* consequently without charge. And this is exactly what happened in certain countries – England and the United States. In France and in many other countries the owner of the bullion had to pay a coinage fee, albeit a very small one, strictly sufficient to cover the cost of minting, which remained constant.

On the other hand, the system of free coinage precludes the possibility of any arbitrary quotation of the prices attaching to the coins. As a metal coin must correspond to a certain number of monetary units, it bears a stamp indicating a certain number of units of account, but *the ratio between the weight of the metal and the unit of account is laid down once and for all.* Moreover, the monetary unit is *defined by a certain* *weight of fine metal.* The law of the year XI, for instance, defined the franc as 'five grammes of silver nine-tenths fine'. The *unit of account and the unit of real money were therefore absolutely identical.*[1]

The fact that they are identical fits in perfectly with the concept of *commodity money.* Such money consists essentially of a certain weight of metal, and the monetary unit in its ordinary denominations – francs, livres, etc. – merely expresses in another way the weight of fine metal which it actually represents.

Consequently, the holder of an ingot of a certain weight and fineness knows the exact amount of minted coin made of the same metal which he can get for it. And this is not only a theoretical conception. For free coinage does, in fact, enable the bullion to be transformed into a constant and predictable amount of coin. And conversely, the right to melt the coin back into bullion – an operation which is generally permitted, and which it would in any case be difficult to prohibit effectively – means that it is possible with a given sum of money to obtain bullion of a weight which is likewise constant[2] and predictable. Here, again, it is evident that the metallic money and the commodity of which it is made are identical except for the change in shape and the slight cost which this entails.

It is at once clear, moreover, that the attribute so acquired by the unit of metallic money, i.e. of representing a constant and calculable weight of fine metal, was of great importance where *international monetary relations* were concerned. The ratio of value between coins made of the same metal had, of course, always been determined by their respective weights of fine metal, but as the official prices of the coins in money of account fixed by each country were subject to change, the ratio between the units of account used in the different countries was also a fluctuating one: when, for instance, the value of the louis was raised to 24 livres and the écu to 6 livres, the French livre ceased to possess the same value relatively to foreign monetary units as it had when the livre and the écu were only worth 20 and 5 livres respectively.

The fact that the unit of real money and the unit of account are identical – which is equivalent to an all-time fixing of their prices – means that *the ratio between a gold 20-franc piece and £1 can be defined exactly and at any time.* It is determined by the respective weights of fine metal; and as we now have a definition, laid down *once and for all,* of the pound and also – albeit an indirect one – of the franc, based on a certain weight of fine gold, we know what the ratio is: the pound *is worth* fr. 25·221. It is worth that amount because it contains as much fine gold as there is in fr. 25·221. The *permanent ratio of value* between two monetary units made of the same metal, which corresponds exactly to the ratio between their respective weights of fine metal, is what is called in technical terminology the *par rate*. As this is a ratio of weight, the different domestic coins made of the same metal now become simply *different denominations of the same money* – gold by weight or silver by weight.

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[1] A unit of real money known as the silver franc, originally worth 20 sols or 1 livre, had already existed under the *ancien régime.* The official price of the silver franc was subsequently fixed at a higher level, and then it vanished as real money, but the name of franc continued to be used synonymously with the livre. See A. BLANCHET and A. DIEUDONNÉ, op. cit., Vol. 2, p. 101.

[2] Subject, of course, to wear and tear of the coin.

Finally, when the adoption of the system of free coinage becomes general, the theoretical par ratio becomes a practical reality. For *thanks to free coinage*, which is normally associated with the *free export and import of the precious metals*, either in a coined or uncoined state, it is possible to turn coins made of the same metal belonging to one country into coins of another country *weight for weight* by recoinage. Apart from the cost of shipment and other small incidental expenses, and perhaps a very modest coinage fee, the *effective exchange ratio* between currencies made of the same metal *corresponds to their ratio of weight*, or in other words to their par value. Thus, countries which accept the same metal for free coinage have almost the same currency. For though they use different denominations to designate units made of different weights of fine metal, the legal and *de facto* relationship between the various domestic monetary units is so well defined and so constant that an elementary arithmetical calculation is sufficient to determine it whenever the necessity arises.

Accordingly, had only one precious metal been coined, we could say that the system of free coinage would have blessed the world of commerce with a universal currency. Almost the same results could have been obtained, moreover, if every country had held sufficient gold to guarantee its external payments, and if silver coins, like those made of base metal, had only performed the function of token coins. But, in practice, there were a number of countries, notably in the Far East, which had only silver reserves. Others – including several European countries – had gold reserves, but also possessed silver reserves on a comparable scale. Accordingly, while in Great Britain only gold was accepted for free coinage, the silver pieces being used only as token coins, the French law-makers decided to place both metals on an equal footing. Under the law of the 7-17th Germinal of the year XI, *gold and silver* were both accepted for *free coinage*, and coins made of both metals were declared to be *unlimited legal tender*.

We have seen that the system of free coinage is perfectly consistent with the concept of commodity money. Gold and silver are commodities, and it was thought that free coinage left this essential aspect untouched. The ingots handed in by private individuals have changed their shape and their name when they leave the mint; but the actual definition of the monetary unit shows it to be synonymous with a certain weight of metal. Unfortunately, the very logic of the system of free coinage led, in the case of bimetallism, to a contradiction. For gold and silver are commodities which are similar, but different, like coffee and tea. By adopting a system of free coinage the Revolutionary legislators really thought they had given up fixing the prices of the coins; after the misunderstood experiment of the law of Thermidor in the year III they nevertheless decided that both gold and silver coins should be stamped to show the number of units of account, the number of francs, which they represented. In order to do this they had, in fact, to adopt an alternative definition of the franc as a gold coin, and establish a legal and *permanent* ratio of value between the coins made of the two metals. Now, the gold and the silver contained in the coins were *two separate commodities*, which, though they might perhaps be affiliated to some extent, were none the less, as it transpired, to pursue their own separate courses. But then bimetallism itself, which presupposes the existence of *two monetary standards* at the same time, and of *a legal and constant ratio of value* between coins made of two separate commodities, itself harbours, under the very principles which inspired its promoters, an inherent contradiction. And free coinage, which, if it could have been applied to one metal alone, would have endowed the world with one single universal currency, was to become, by the very fact of being applied in certain countries to two metals at the same time, an empirical and incoherent system which could hardly be expected to survive. Because it opened under a system of bimetallism, the era of free coinage, which might have been one of perfect monetary stability, was in danger of becoming yet one more era of monetary difficulties.

Such, at least, was the conclusion which emerged from the theoretical premises upon which the promoters of the system based themselves. And when they embarked upon the experiment they did not do so without voicing their scruples.[1]

We shall see that, contrary to their expectations, the system was to function for nearly three-quarters of a century, and that though certain difficulties were encountered by the bimetallist countries, it was destined to give international monetary relations a stability such as they have rarely enjoyed since.

The scruples felt by the promoters of the system still linger on, however, in the minds of economists, many of whom cling to theoretical principles which are precisely what the bimetallist experiment, when correctly interpreted, shows to stand in need of revision.

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[1] Invoking the authority of Locke and Newton, the first report of the Coinage Committee (1790) said that there was 'a physical impossibility and a perpetual contradiction between the facts and a law which attempted to fix the rates of the two coined metals at the same time on an invariable basis'.

§3. The reign of bimetallism

Bimetallism, which was established in France by the law of the 7-17th Germinal of the year XI, was adopted by many nations in Europe – notably Italy, Switzerland, Belgium, Greece, and Spain – and on the American continent. It functioned until 1873, when the free coinage of silver was suspended. In France and in most of the bimetallist countries the legal ratio between gold and silver coins was 1 to 15½.[1] During the whole of this period the rate of silver in terms of sterling, i.e. of gold, in London, the centre of the world silver market, fluctuated slightly above or below the rate corresponding to the legal ratio. After the troublous period of the Consulate and the Empire, that is, between 1814 and 1873, four periods of alternating rises and falls are recorded: from 1814 to 1819 the annual average showed a premium on silver; from 1820 to 1850, on the other hand, it was below the rate which would have corresponded to the legal ratio, so that there was a loss on silver, or, in other words, a premium on gold; between 1851 and 1866, again, the annual average showed silver to be at a premium; whilst from 1867 onward gold was once more at a premium.

At first sight the existence of such fluctuations would seem to confirm the fears voiced by the law-makers of the year XI and the concepts by which they were inspired. The ratio of value between gold and silver changed as time went on. What was much more important, the metallic reserves of the bimetallist countries felt the repercussions of the changes. The metal which was at a premium was exported: sometimes it was the gold coins and at other times the silver coins which took to flight; the functioning of bimetallism thus providing a new illustration of the working of Gresham's famous Law.[2] In 1856 several European bimetallist countries – France, Switzerland, Belgium, and Italy[3] – combined to take common action and formed the Latin Union.[4] The first measure adopted was to lower the content of the fractional silver coins – of two francs and under – from ·900 to ·836 in order to render them inexportable. But this was speedily followed by a change of trend, and the drain of gold was to give rise to a much more radical measure – *the suspension of the free coinage of silver.*

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[1] When account is taken of the respective costs of coining the two metals, the effective legal ratio in France was 1 to 15·59 and then 1 to 15·58. In the United States a ratio of 1 to 16 had been fixed in 1834.

[2] See below, Part III, Chap. III, §1.

[3] They were later joined by Greece.

[4] See A. P. JANSEN, *Les Conventions monétaires*, and CHAUSSERIE-LAPRÉE, *L'Union monétaire latine*, Th. Paris, 1911. After being long prorogued, the Latin Union came to an end in 1921.

And yet, if we examine all the data very closely, we cannot fail to notice one supremely interesting fact, namely that the variations in the silver rate on the London market, or, to put it differently, the variations in the 'commercial ratio' between gold and silver over this long period, *covered a very narrow range* (2 to 3 per cent at the outside). The records show that the commercial exchange ratio between the two precious metals only fluctuated very slightly around the legal ratio of the bimetallist countries, and though it was not stationary, it was nevertheless very *stable.* This simple fact is sufficient to disprove the whole theory on which the sceptical promoters of bimetallism had based their experiment.

Even in our day, strange to say, there are many who still continue to accept their premises and their train of reasoning, who believe, that is, that gold and silver are two commodities, the free coinage of which merely transforms them physically without in any way altering their nature; two commodities which acquire their value in the same way as other commodities, and to which, consequently, no constant exchange ratio can be assigned. And it is still generally concluded that bimetallism is to some extent an 'unnatural', non-viable system, which can in any case only function as long as the commercial rate of each of the metals remains fairly close to the rate corresponding to the legal ratio.[1]

Now, we have just seen that, *in actual practice, as long as bimetallism was in operation, the fluctuations of the commercial rate of silver around the rate corresponding to the legal ratio were very slight,* and we shall find that this was inevitably so.

Silver was quoted in London, in a gold-monometallist country, hence in a gold currency; and it was from the quotation in gold currency that the commercial ratio between the two metals was derived. But the London market was near the bimetallist countries and quite close to the Paris centre, where the two metals were freely coined, and both the export and the import of the two metals was likewise unrestricted.

The free acceptance of gold and silver by the Paris mint meant that silver *could be sold there in any quantity at a fixed price,* which was all that was required to ensure a *minimum* rate for silver. Suppose, for instance, a buyer did not want to pay a price equivalent at least to the legal ratio, then his seller could send his money to Paris, have it coined, convert his écus into 20-franc pieces and repatriate them to England, where they were turned into sterling. It was the number of pounds which he could obtain in this way, at a very moderate fixed charge calculable in advance, which consequently constituted the *minimum limit* of the silver rate on London.

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[1] Thus certain authors of recent works have not hesitated to introduce into their argument hypothetical instances of the commercial rate of silver falling to, say, 20 per cent below the rate corresponding to the legal ratio; whereas the analysis which follows, which has already been formulated in the present author's work *La Monnaie et les Phénomènes monétaires contemporains,* and which is, moreover, confirmed by experience, clearly shows that while the bimetallist system endured the silver rate could not fall considerably below – or rise considerably above – the rate corresponding to the legal ratio.

Conversely, if a seller demanded an excessive price of his buyer, the latter could send sterling to Paris to be converted into French gold coins and obtain in exchange the same amount in silver coins. The number of pounds required for this operation represented the *maximum rate* of silver on the London market.

All things considered, the mistake – a quite excusable one in the year XI, if less excusable in our day, when the technique of organized markets is common knowledge – lies in 'commodities' being confused with commodities which are bought and sold on a competitive market, whereas the two commodities here are bought and sold on *markets which are organized and interlinked*. There is a *minimum rate for silver in terms of gold*, due to the existence of an *unrestricted market, at one price*. And there is also a *maximum rate*, because the market can obtain *adequate supplies at a certain other price*.[1] The ratio of gold to silver can therefore fluctuate only within these two limits.

It follows that *the assumption of a 'commercial rate'* for silver, understood in its usual sense as representing a rate similar to the rates which rule on the ordinary markets, *is based on faulty premises*. The French law-makers of the year XI, who regarded the problem as incapable of solution, had solved it at least in so far as the requisite conditions were fulfilled, where, that is, the bimetallist countries, squeezed between the gold-monometallist and the silver-monometallist countries, were able to guarantee the reciprocal convertibility of the two metals by means of their own monetary reserves.

When the problem is correctly stated, we find, then, that bimetallism does not present the inherent contradiction apprehended by its promoters, who based their arguments on inadequate theoretical grounds. In itself, bimetallism was workable. And not only did it function, but *for nearly three-quarters of a century it dominated international monetary relations* and brought them stability such as they have rarely experienced since.

Our study of the machinery of the exchanges between gold-currency and silver-currency countries has shown us that the existence of bimetallist countries enabled them to effect their monetary settlements on a fixed basis. England, for example, was able to turn her pounds into gold francs at par and the gold francs thus obtained into silver francs, unit for unit, by paying a small commission to the intermediaries; these silver francs could afterwards be converted into rupees by recoining, at par. India could make her payments to England by adopting the reverse process. Thus, thanks to the presence of the bimetallist countries, exchange settlements between gold-currency countries and silver-currency countries could be carried out within the limits of the inward and outward gold points and silver points.

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[1] It would be equally possible, moreover, to express the rate for gold in silver, and to visualize the system as functioning when it is gold which is purchased with silver. There is only the one exchange ratio, which can be expressed in either way. And it is this single conversion mechanism which comes into play and links together the value of gold and the value of silver.

It was, moreover, primarily the effective settlements between gold-monometallist and silver-monometallist countries which were the cause of the slight fluctuations in the commercial ratio of the two metals. The way the premium alternated between gold and silver was blindly attributed to the working of the quantity theory. It was unhesitatingly proclaimed that the metal which stood at a premium did so because its production was slowing down and it was therefore becoming scarce. As a matter of fact, this argument would seem to have been confirmed by events where part of the bimetallist period is concerned, but it is disproved by those which occurred over a much longer period. Thus, between 1820 and 1850 the proportion of silver in the production of the two metals fell steadily, and yet gold, not silver, was at a premium. And though between 1850 and 1856 the premium on silver did as a rule correspond to a reduction in the proportion of silver produced, the following decade was marked by a continuance of the premium on silver, although from that time the pace of its production was more rapid than that of gold.

The problem is really a more complex one than this, and if it is to be correctly stated, the history and geography of money must be taken into account. In the nineteenth century the majority of European accounts with distant countries were settled on the London market. Now Great Britain was on a gold-monometallist régime, and a large part of the payments for which she was responsible involved Far Eastern countries which were on a silver standard, so that silver commanded a premium when the stream of silver on to the London market was insufficient to pay the balance due to India and other countries with silver currencies. It then became necessary to call on the monetary reserves of the bimetallist countries; this occasioned further expenditure, which sent up the rate of silver. It was not, as has been asserted, because silver was at a premium that it was exported; it was because it was in request for export purposes that its price went up.[1] And the case was reversed when the London market was in credit with countries on the silver standard.

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[1] This interpretation, which is the logical outcome of a rational analysis of the basic problem involved, is borne out by the facts. For an account of the historical research which enabled the facts to be compiled, see BERTRAND NOGARO, *L'Expérience bimetalliste du XIX^e^ Siècle et la Théorie générale de la Monnaie*, Rev. d'Econ. Polit., 1908, and *La Monnaie et les Phénomènes monétaires contemporains*, 2nd Ed., p. 48.

Hence the slight fluctuations in the rate of silver above and below the rate corresponding to the legal ratio of the bimetallist countries were caused by the variations of the exchange between gold-monometallist and silver-monometallist countries; and the fact that they were extremely limited in range was due to the conversion mechanism embodied by the laws of the bimetallist countries and the possibility of alternate recourse to their gold reserves and their silver reserves for purposes of international payments.

It would not be an exaggeration to say that during the long period extending from the beginning of the nineteenth century until 1873, bimetallism, as well as acting as the currency system of certain countries, *dominated the monetary relations of the whole world.*

We have seen that bimetallism did not in reality imply any inherent contradiction, that it was logically possible, and that it did work when certain *de facto* conditions were present. As it had not been universally adopted, however, the countries which thus assumed responsibility for securing the conversion of one metal into the other had to hold adequate reserves of both metals if they were to discharge it without harmful effects. Now, we have seen that, in practice, their task was often a somewhat thankless one. Between 1851 and 1866, in particular, action was necessary to counteract the continued drain of silver money. From 1867, payment requirements in the Far East having become considerably smaller, the bimetallist countries had to serve as an outlet for the surplus of silver available. And as the silver offered represented additional imports, payment for which had to be made largely to England, hence in gold, the bimetallist countries ran the risk, if they allowed the operation to be carried through, of losing their gold reserve in exchange for a stock of unwanted silver. It was at this point that they decided to suspend the free coinage of silver, and this was the end of bimetallism.[1]

§4. The depreciation of silver

In view of the circumstances just described it will be perfectly evident that *the disappearance of bimetallism was bound to be followed by the disappearance of a stable ratio of value between the two precious metals.* The silver rate was to cease to be linked to the legal ratio fixed between them, since silver bullion was to cease to be convertible weight for weight into coins having a fixed exchange ratio to gold coins. The silver rate was henceforward to fluctuate like that of an ordinary commodity: and as supply was then in excess of demand, its *fluctuations* were accompanied by a general tendency towards a *decline.* Hence it can logically be inferred from the foregoing that the suspension of free coinage, or, to put it differently, the suppression of bimetallism properly so-called, was *the original cause of the depreciation of silver.*

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[1] The above account shows that bimetallism can only be operated successfully when it is *universal.* And even so, the states concerned would have to be prepared to receive all the silver produced, whatever its quantity, at the same price as it would fetch if it were turned into money, when the supply was in excess of monetary requirements. And as silver is nowadays often a by-product of the extraction of various other metals, it would be rather difficult to foresee where a commitment on such a scale would lead.

This interpretation of the facts, however, has by no means dawned on the minds of all our economists. The fall in silver had, in fact, begun in 1867, and it had become pronounced even before the various European and American nations decided to suspend free coinage. The suspension was, moreover, at first temporary, and it was not definitive until 1878; with the result that this date has stuck in the memory of certain economists of a juristic turn of mind. And many others, faithful to the theories espoused by the promoters of bimetallism, have been quite ready to agree that it was on the contrary the fall in the commercial rate of silver which led to the disappearance of bimetallism.

Now, we have just seen that, *as long as bimetallism functions, the commercial ratio of value between gold and silver can only fluctuate within narrow limits.* So it cannot have been widening fluctuations in the rate of silver which led to the suspension of free coinage. Free coinage was suspended *not because the commercial rate of silver had declined, but because the quantity of silver being offered to the mints was too large* – which is not at all the same thing. And it was the suspension of free coinage which, by doing away with the effective convertibility of silver into gold at a fixed rate, caused its rate to fall.

The accentuation of the fall in silver – in other words of the premium on gold – did, of course, slightly predate the official decision (September 1873, at Paris and Brussels) to *restrict* coinage, and this may incidentally be explained partly by the administrative obstacles already placed in the way of holders of silver, which had had the effect of causing delays and a consequent loss of interest, and were in themselves liable to give rise to uncertainty. But despite a fairly widespread belief to the contrary, it must be recognized that the fall in silver only exceeded the limits of the fluctuations registered under the reign of bimetallism after the suspension of free coinage. The yearly average figure for 1873 had, in fact, already been reached in 1833, and that for January to September 1873 was a lower one. It was therefore only after the suspension of the free coinage of silver – in other words, after the disappearance of bimetallism – that the depreciation of silver really set in.

However this may be, the long period of stability in the ratio between gold and silver and in international monetary relations which had been the concomitant of bimetallism and its influence over the whole world, was succeeded by a *period of instability in the rate of silver and in the monetary relations between gold-currency and silver-currency countries, related to the disappearance of bimetallism.*

The rupee exchange, for example, was indeed to continue to be *associated* with the rate of silver, but it, too, began to *fluctuate similarly.* Persons who owed money to India could, of course, always discharge their obligations by buying silver and sending it to the Bombay Mint to be converted weight for weight into rupees. But from now onward *the metal was purchased at the market rate, which had become unstable.* Conversely, a Bombay trader who had a debt to settle in England was unable, as in the past, to obtain in exchange for his rupees an equal weight of silver francs and then the same number of gold francs to be converted into sterling. If he was reduced to sending silver to his foreign creditor, the rupees which he exported would only be *accepted for the weight of silver in them,* at the market rate. India, in short, ceased to enjoy the benefit of the *regular silver point* and the *indirect gold point* previously conferred upon her by the bimetallist countries. The rupee exchange was in future governed only by an *unstable silver point.*

The same thing applied to all the silver-standard nations, foremost among whom were now to be counted all the Far Eastern countries (China, Japan, etc.). These now joined the already sufficiently long list of countries with irregular exchanges, which included practically all the South American and a few European countries.

As this was happening, most of the countries which had previously been bimetallist were reverting to an effective gold standard system – known by the inelegant and inaccurate name of 'limping' bimetallism. *This meant that the system of bimetallism was succeeded by a period of uncertainty dominated by the depreciation of silver, which divided the world up into two monetary groups: those countries whose exchanges were regulated on a gold basis, and those which had depreciated currencies and widely fluctuating exchanges.*

§5. Monetary reform in India and the gold exchange standard

The end of the nineteenth century was characterized from the standpoint of monetary policy by the efforts made to remedy the instability of the exchanges between gold-currency and silver-currency countries. An experiment on these lines carried out in India ended in the creation of a new monetary system.

By 1893 silver had lost almost half its value, and the rupee, which had stood at a parity with sterling of 27 pence before the silver crisis, had fallen to a rate of close on 14 pence. On June 26th of the same year the Indian Government passed a law suspending the coinage of the rupee and fixing a new parity between it and sterling. The law contained no other clause than this. It was obviously expected that the suspension of coinage would bring the rupee rate up to the new parity. Because of the expansion of business, and more especially because of the hoarding which went on amongst the native population, it had been the custom to coin large quantities of rupees every year in order to keep India's monetary reserve at a satisfactory level. So the rupee was to become scarce, and the healing properties of scarcity were counted on to restore its value.

The Indian Government had, however, taken a more adequate measure than this. By suspending coinage it had suspended *freedom of coinage.* Now until that time, as we have seen, it had been possible for India's debtors to fulfil their engagements by purchasing silver at market prices and having it coined at Bombay. The rate of the rupee was thus governed by an unstable silver point, and it followed very closely the fluctuations of the silver rate. The first result of the suspension of the coinage of the rupee was to *dissociate its rate from the rate of silver.*

As, however, silver could no longer be turned into rupees, it also became necessary when the drafts drawn on India were insufficient to offset her foreign debts, to offer British and other debtors a new means of payment. It was very soon decided that such debtors could *discharge their obligations in gold,* the Indian Government undertaking to provide them with rupees at the official rate of 15 rupees to the pound, or 1 rupee for 16 pence. In this way a *gold import point* came into operation.

Under a law passed in January 1898, *gold could be paid into the Bank of England for this purpose* for account of the Indian Government, and in this way the latter built up a *gold reserve.* When the reserve appeared to be adequate the Indian Government decided, at the request of competent business men, to *reciprocate* in case of need by providing *sterling in exchange for rupees* at the same official rate of 16 pence. A *gold export point* thus came into existence, and henceforward the rupee exchange was to be confined within the narrow limits of two gold points, as if it had been a gold currency. *From 1899 it was, in fact, for many years a stable exchange.*

A new monetary system, known as the *gold exchange standard,*[1] had thus been established by empirical methods. It furnished practical proof of the fact that a country whose currency consisted of silver – or paper – could enjoy the benefits of the gold standard in its exchanges with foreign countries, provided it held a stock of gold sufficient to meet a possible deficit on its balance of payments, and that the *convertibility* of its internal currency *at a fixed rate* for this purpose was guaranteed.[2]

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[1] Unfortunately, this name afterwards came to be used in French economic literature to denote a system of inconvertibility, not into gold, but into foreign exchange.

[2] The theoretical significance of this remarkable experiment is discussed at greater length in Part III of this book. For further information on this subject, see BERTRAND NOGARO, *La Monnaie et les Phénomènes monétaires contemporains*, 2nd Ed., p. 58 *et seq.*, and E. W. KEMMERER, *Modern Currency Reform.*

CHAPTER II

FIDUCIARY MONEY UP TO THE END OF THE NINETEENTH CENTURY

§1. General survey

As we have already shown, the period corresponding to the *ancien régime* was essentially an era of metallic money, and fiduciary money, which made its appearance at the very close of the period, only played a very limited part in it. The modern bank-note dates from the second half of the seventeenth century (founding of the Bank of Stockholm in 1656 and of the Bank of England in 1694)[1] and though it served as a medium of exchange, it was then only a promise to pay in metallic money. It is true that the notes issued by Law's Bank[2] degenerated into paper money when on February 28th, 1720, the royal authority was compelled to bolster up the issuing institution by declaring them to be a forced-tender currency. But this was an isolated occurrence.[3]

It should be observed, however, that the fiduciary money issued towards the end of the *ancien régime* did not always begin as bank-notes. We see it emerge in Russia, between 1658 and 1663, in the shape of copper counters.[4] We also witness its appearance in the Colonies, also at the end of the seventeenth century, in the form of money signs issued by the public authority: such was the curious case of the 'card money' in Canada, and of the notes issued about the same time in Massachusetts and then in several other British colonies in North America,[1] and lastly in 1775 at the time of the War of Independence.

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[1] The Bank of England began by issuing promises to pay, bearing interest and assignable by endorsement; in 1697 these were made payable to the bearer. It was only in 1759 that the Bank of England issued notes of relatively small denominations (£10), and not until 1793 that it issued £5 notes. At the end of the eighteenth century banks of issue virtually swarmed in England and Scotland. See B. NOGARO and W. OUALID, *L'Evolution du Commerce, du Crédit et des Transports depuis 150 Ans*. It should be remarked, however, that in China the use of paper money dates back to the period corresponding to the Middle Ages (ninth or tenth century).

[2] See L. LEVASSEUR, *Recherches historiques sur le Système de Law*; CH. RIST, *Histoire des Doctrines relatives au Crédit et à la Monnaie*; RENÉ GONNARD, *Histoire des Doctrines monétaires*; PAUL HARSIN, *Les Doctrines monétaires et financières en France du XVI^e au XVIII^e Siècle*; and a new edition of the works of John Law, also by PAUL HARSIN.

[3] It was not until 1776 that, taking advantage of the absence of restrictive laws, a new bank, the Caisse d'Escompte, again started to issue notes.

[4] See the article entitled *Papiergeld* by W. LEXIS in the *Handwörterbuch der Staatswissenschaften*. Mention should also be made of the 'money' notes issued by the Treasury in exchange for bullion or specie destined for the coining of new money. Notes of this kind were issued in England in 1698 without giving rise to incidents. It was the same in Holland. In France a similar issue made at the same time was badly received, and the money notes depreciated.

It was not until the time of the French Revolution that paper money in the form of Government notes came into prominence in the history of money with the notorious experiment of the assignats. A second large-scale experiment in paper money issued by the State was made in the United States during the Civil War.

From the close of the eighteenth century, on the other hand, bank-notes had on occasion been turned into paper money by being declared to be a forced currency. This was done in England during the Napoleonic Wars (1797-1820), and then in many other European and American countries, particularly in times of war.[2]

During the first three-quarters of the nineteenth century, however, the issue of paper money was confined to a few isolated instances, and during this period it was only in the South American states that numerous experiments were made with it.

But when bimetallism disappeared the system of paper money became more widespread even in Europe. There were some amongst the countries which had just discarded bimetallism whose gold reserves were not sufficient to enable them actually to pass over to the gold standard; and as one feature of the bimetallist system – the unlimited legal tender power of the silver coins – still survived in such countries, their notes were, in fact, no longer convertible except into silver: Spain was a case in point. But there were also, in Europe, silver-monometallist countries with large fiduciary circulations whose notes were equally convertible into silver; such was the case of Austria. These countries succeeded in keeping their exchanges well above the falling silver point which would have enabled the notes to be convertible into silver. Consequently, *the convertibility of the notes into silver was prevented from coming into operation, and the countries concerned found themselves on what was, in fact, a paper-currency system.*

It would be beyond the scope of this book to describe in detail the functioning of this system in all the countries where it was applied, sometimes for long periods, from the end of the eighteenth century until the end of the nineteenth century. It will be sufficient for our purpose if we stop and consider certain particularly characteristic and instructive instances. We will study first two kinds of Government paper, the issue of which, occurring as it did in times of unrest, culminated in an agio relatively to metallic money. We will then examine an early instance of a forced currency, that of the Bank of England notes from 1797 to 1820, after which we will proceed to consider a few instances of notes being made inconvertible and thereby becoming subject to exchange fluctuations – in Austria in particular. We will finally devote a concluding paragraph to a study of Argentina's monetary system and the reform which transformed it into a system very similar to that put into operation at the same time in India under the name of *gold exchange standard.*

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[1] See below, Chap. IV, §2.

[2] See SUBERCASEAUX, *Le Papier-Monnaie.*

§2. The assignats of the French Revolution[1]

The assignats in their original form were created by two decrees of the National Constituent Assembly on December 19th and 21st, 1789. They were issued at that time in large denominations – 1,000 livres – bore interest at 5 per cent, and were exchangeable against the land put up for sale by the Government. The intention was that they should eventually be burnt after the sale of the national property purchased through their agency.

Thus the assignats were originally Treasury bonds, pledged by the property which they had served to purchase.

A decree passed on April 17th, 1790, made them *tenderable as money* and reduced the interest on them to 3 per cent. Then on *September 29th, 1790,* the Assembly turned them into *bearer notes, carrying no interest,* to be used to discharge debts due by the State. It was from this last-mentioned date, then, that the assignats actually became a paper currency. But it was a *pledged* paper currency – a feature to which the contemporary public appears to have attached great importance, and which seems to have had a considerable influence on its fate.

In April 1790 denominations of 200 and 100 livres were issued in addition to the existing ones of 1,000 livres; in the September denominations of 100 and 50 livres were also issued, and on May 6th, 1791, the Assembly decided to create denominations of 5 livres.

The first issue amounted to 400 millions, 170 millions being for the purpose of repaying the *Caisse d'Escompte.* The second, which was voted on September 29th, 1790, was for 1,200 millions, but this sum included the 400 millions already issued, whilst the new issue of 800 millions consisted of denominations of 100 and 50 livres. Then on May 6th and June 19th, 1791, an issue of 100 millions and a further issue of 600 millions, in denominations of 5 livres, were voted.

On August 1st, 1791, the notes in circulation, including those which had been cancelled, amounted to 1,100 millions, and 346 millions were still available.

It was now the turn of the Legislative Assembly to make new issues, and it put into circulation the assignats received in payment for the national property. When it broke up (September 20th, 1792) there were in circulation, including the notes which had been cancelled, notes for close on *2 milliards*, not counting the 'billets de confiance' issued by local bodies as small change . . . and the counterfeit assignats. The issues of the Convention (September 21st, 1792-October 26th, 1795) were still more abundant. In May 1794 the amount of the assignats in circulation had reached a figure of 5½ milliards. In the year III (September 21st, 1794-September 20th, 1795) nearly *15 milliards* of assignats had been created, or as many as in the four preceding years. On the 1st Brumaire of the year III, at the end of the Convention, the amount of assignats issued was in the neighbourhood of *20 milliards* (19,462 millions). This figure was more than doubled in a few months by the Directory, for when the assignat experiment came to an end (30th Pluviose of the year IV-February 19th, 1796) the issue had reached a figure of 45,581,000,000.

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[1] In connexion with this paragraph, see *L'Histoire financière de la France,* by MARION, Vols. 2 and 3, and the *Tableaux de Depréciation du Papier-Monnaie,* edited by PIERRE CARRON. See also A. DESPEAUX, *L'Inflation dans l'Histoire,* and J. MORINI-COMBY, *Les Assignats.*

As one issue followed another the value of the assignats in metallic money passed through various stages of evolution. According to the rates quoted in Paris, a hundred livres of assignats was worth 90 livres in metal, or 90 per cent of its nominal value, at the end of 1790; it was still worth 80 per cent at the end of 1791; after dropping to 60 per cent in June 1792 the rate had rallied to more than 80 per cent by the end of the year. Similarly, in 1793, a fall to 22 per cent in August was followed by a recovery, and at the end of the year the rate stood at 50 per cent. But in 1794 it fell almost uninterruptedly until it reached 20 per cent. In 1795 it collapsed to 0·67 per cent. On February 19th, 1796, when the experiment was brought to an end, the rate represented barely 0·3 per cent of the nominal value of the assignats.

The history of the assignats illustrates a particularly characteristic experiment in the issue of paper money created to cover the expenditure of the State, which ended by the paper issued becoming completely worthless. Nevertheless, if we are to understand it aright, we must analyse it very carefully.

We note first of all that the depreciation here was not expressed essentially, as was often to be the case in later periods, in an exchange loss or in a rise in prices measured by an adequate index. There was, of course, an exchange loss: the assignats, which depreciated internally, also depreciated relatively to foreign metallic currencies: we observe, for instance, that their depreciation – which varied somewhat in different parts of the country – was greatest in the frontier departments; but it was not measured primarily in terms of foreign currencies. On the other hand, the prices of goods and services paid for in assignats increased during the period under consideration. But there was a more direct gauge of their value – *the quotation of the assignats in metallic coins*,[1] notably in gold louis of 24 livres. For it is essential to note that *in this period metallic money long continued to circulate concurrently with paper money*, and from the outset the agio on the assignats was officially quoted by brokers. It was a question primarily of *the rate of a paper currency relatively to another domestic currency*, or, to put it differently, of an *internal agio* measured by direct comparison with a metallic currency.[2]

The agio on the paper currency was naturally accompanied by a corresponding rise of prices in terms of paper money, and as long as the two kinds of money were circulating concurrently *two price scales* were in force according as payment was made in one or the other. Thus in Floréal of the year III a newspaper which was sold at 2 sous in metallic money sold for 15 francs in assignats. And different prices were stipulated in contracts according to the money utilized.[3]

It should be observed, on the other hand, that the pace and rhythm of the depreciation were not steady. *In the initial period*, which lasted until the end of 1793, the depreciation certainly increased on the whole as the issues multiplied, since by the end of 1793 the assignat had lost half its value; but *there was far from being any exact connexion between the abundance of the paper issued and its depreciation*. The rate of the assignat was for the most part linked up with political, and particularly with military events. According as events made the chances of the new régime's survival appear favourable or remote, speculators assessed the probability or improbability of the national property, for the sale of which the assignats were taken at their nominal value, remaining in the hands of its new owners. *Thus the rate of the assignats at this period was more or less intimately connected with the supposed value of the pledge against which they were issued.*

From 1794 the depreciation of the assignat became much more continuous and its rhythm accelerated; and the fall in its rate, whilst it outstripped the increase in the note issues, caused them to become still more numerous: for owing to the heightened pace of the fall in its value,

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[1] At the end of the period, moreover, there was a rise in prices which was considerably greater than the depreciation of the assignats relatively to metallic money.

[2] The necessity for a comparison between the two currencies probably arose in the first place owing to the fact that the assignats had been issued in large denominations which had to be exchanged for metallic money in order to 'get change'. Furthermore, even the denominations of 5 livres could be exchanged for silver or copper-alloy coins until they became too depreciated.

[3] This practice was forbidden by the Convention, which was also reduced to prohibiting the quotation of the assignat in metallic currency. At the same time it laid down a scale of fixed prices (the 'maximum'); but the chief effect of these measures was to cause a flight from metallic money, and it was not very long before they were repealed.

the creation of a given volume of purchasing power demands the creation of an ever-increasing quantity of monetary units. . . . This is the fatal cycle which ends in the destruction of paper money.

We will endeavour later on to sum up the theoretical significance[1] of this experiment, which was carried out at the same time as others of the same kind, but which is a particularly characteristic example of the creation of notes issued by the State for its financial requirements, and of depreciation consisting essentially of an internal agio.[2]

§3. Inconvertible notes and the premium on gold in Great Britain (1797-1821)[3]

Hardly had the notorious experiment of the assignats ended when England in her turn, though in quite other circumstances, embarked on an experiment in inconvertible notes. She was at war with France; in February 1797 the threat of invasion led to panic amongst the public, who demanded the redemption of the notes in cash. On February 27th the Bank of England, in agreement with the Government, suspended the repayment of the notes in cash,[4] and on March 3rd its decision to do so was given effect by the Bank Restriction Act. Under this law the notes were given unlimited liberating power for the payment of taxes and debts in respect of the State and became a lawful means of payment in transactions between private persons. They only became legal tender, however, under a law passed in 1811.

The suspension of the convertibility of the notes had originally only been enacted for a period of three months, but it was extended until 1819, when a law was passed making them again convertible at par, into bars as from May 1st, 1821, and into cash as from May 1st, 1823.[5]

During this long period of inconvertibility the quantity of notes put into circulation by the Bank of England more than doubled,[6] and it was not until their convertibility was restored that it was somewhat reduced.

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[1] See Part III, Chap. I, §§1 and 2, and Chap. II, §1.

[2] A fresh experiment in paper money was made immediately afterwards by the Directory with the issue of land warrants. It had similar results. See MORINI-COMBY, op. cit., p. 127 *et seq.*

[3] See CANNAN, *The Paper Pound, 1797-1819*, and ANDREADES, *Histoire de la Banque d'Angleterre.*

[4] The panic was chiefly amongst the general public and the farmers. Immediately the Bank made its decision well-known business men met together and made public their decision to accept the Bank's notes, even inconvertible ones, as payment for all debts, and this did much to create confidence in the notes.

[5] Actually the Bank of England effected repayment in cash from May 1st, 1821.

[6] The amount of the notes issued by the Bank of England at the beginning of the period was about £12 millions. This figure more than doubled between 1810 and 1820, whilst that of the notes issued by the other banks amounted to more than £20 millions.

The suspension of the redemption of notes gave rise to a *premium on gold*. Whereas the standard ounce of gold was worth £3 17*s*. 6*d*. in cash, its price in paper pounds advanced progressively - though erratically and with periods of recession - to more than £5 in 1813, and then declined - also erratically and with occasional rallies - until, with the resumption of cash payments, it returned to par.

As for prices, the general trend of these was somewhat similar to that of the premium on gold. They rose gradually, especially from 1808, reached their highest level in 1814, and then declined.[1]

Thus, although the inconvertibility of bank-notes in England at the beginning of the contemporary period lasted nearly a quarter of a century, it was not accompanied by unduly large issues of notes, and the depreciation of the notes relatively to metallic money, even when it was at its lowest point, was never much more than 20 per cent.

It should be observed, too, that here the premium on gold would appear to have been *principally in the nature of an exchange loss.* Gold had not, of course, disappeared inside England, and consequently the premium on gold was not confused - as was often to happen later - with an exchange loss on foreign gold currencies. On the other hand, though there was no embargo on the export of bullion, the Bank of England did not part with any, and the melting down of specie was prohibited. There was therefore no *regular* convertibility for purposes of foreign payments.

The nature of the depreciation of sterling at this time was stressed by a contemporary writer, Thomas Tooke.[2] Tooke showed that *the cessation of regular convertibility must inevitably result in an exchange loss whenever a debit balance had to be liquidated abroad.* Now, England, who was at war, had to make large purchases abroad, and she also had to get subsidies to her allies.

Tooke showed, on the other hand, that the exchange loss *meant a corresponding increase in the prices of imported products,* which would largely explain the concomitant rise in prices. And he assured his readers that the premium on gold would disappear, even without a reduction in the monetary circulation, as soon as the notes became *convertible* again at a fixed rate.

Ricardo, on the contrary, established no other relationship between the inconvertibility of the notes and the premium on gold than that resulting from the increase in the note issues.[3] In his opinion the directors of the Bank of England, having no longer to exercise so close a control over the amount of the issues, since they were no longer bound to redeem the notes, had allowed it to increase rapidly; and the increased number of monetary units which the notes represented had reduced the value of each unit, with a consequent rise in the prices of commodities in general and of the price of gold in particular. Only a reduction in the quantity of notes in circulation, he added, could put an end to the premium on gold.

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[1] See *The English Bank Restriction*, in W. C. SUMNER's *History of American Currency*, and SUBERCASEAUX, op. cit., p. 324.

[2] Author of the famous *History of Prices*.

[3] See Ricardo's tract entitled *The High Price of Bullion a Proof of the Depreciation of Bank-Notes*. It was pointed out to Ricardo that the fluctuations in the premium on gold were far from corresponding to the variations in the issues of bank-notes. To

As we have seen, the premium actually disappeared *as soon as convertibility was resumed*, and *without any appreciable reduction of the fiduciary circulation*. Events proved Tooke to be right and Ricardo to be wrong. This conclusion is reinforced by a careful study of later experiments. But Ricardo's concept continued even so to dominate economic theory up to the end of the nineteenth century, and, as we shall see later on, it is still prevalent amongst many of our contemporary economists.

§4. Paper money in the United States during the Civil War[1]

The Civil War – 1861-5 – was the occasion for a new large-scale experiment in paper money which lasted for some few years.[2] The creation of paper money first originated in the discontinuance of the redeemability in cash of two kinds of monetary instruments – the *bank-notes* and the *Treasury bonds* which bore no interest, but were redeemable at sight in gold (Demand Treasury notes). This measure was passed in the closing days of December 1861 and put into force at the beginning of 1862.

Apart from this, under a law passed on February 25th, 1862, Government notes were issued which were legal tender in all public and private payments and exchangeable against thirty-year 6 per cent bonds. Two other laws, one passed in 1862 and the other in 1863, authorized new issues of these Government notes, which were known as *greenbacks*, while the non-interest-bearing Treasury bonds speedily went out of circulation.

The greenbacks formed the principal element in the paper money

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this he objected that it might be some time before their effect was felt, and furthermore that part of the notes replaced hoarded or exported coin. As for the effects of an adverse balance of payments on the exchange, he contended that it could not give rise to fluctuations on a scale of more than 3 or 4 per cent. But if this was true in his day of notes which were convertible into metal, it did not hold good where inconvertible notes were concerned. Ricardo overlooked the immediate effect on the rates of exchange and on the gold rate of the *disappearance of a gold export point* based on the convertibility, at a fixed rate unit for unit, of notes into specie.

[1] Where this subject is concerned, consult W. C. MITCHELL's excellent works: *A History of the Greenbacks*, and *Gold, Prices and Wages under the Greenback Standard.*

[2] The forced-currency measure was repealed as from January 1st, 1879, by a law passed on January 14th, 1875.

put into circulation during the Civil War. When hostilities ceased, the amount issued had reached a net figure of $431 millions.

The greenbacks had one thing in common with the assignats of the French Revolution: they were Government notes issued to cover public expenditure. But although their circulation augmented an existing issue, already of considerable magnitude, of bank-notes which had become inconvertible – 238 millions in 1865 – the stock of paper money held by the United States during the Civil War never assumed anything like the vast proportions of the assignats. Thanks to the serious efforts made by the Treasury authorities, their part in the financing of public expenditure became more and more restricted, and from 1864 onward they were only issued in negligible quantities.[1]

Nevertheless, *as soon as the greenbacks were declared to be a forced currency, a premium on gold made its appearance*, and *on January 13th, 1862, it began to be quoted on the New York Stock Exchange.* In February 1862 the monthly average rate for 100 paper dollars stood at 96·6 gold dollars. A little later it registered 62·3. After rallying to 79·5 in April 1863, it reached its *minimum* rate, 38·7, in *July 1864.* But in May 1865 – when hostilities were drawing to a close – it again stood at 78·7, though it declined slightly, to 68·4, in December 1865.[2] The premium on gold, after having risen imperceptibly in 1866, fell progressively, with occasional very slight reactions, until 1878, to *disappear, together with the régime of the forced currency* itself, in 1879.[3]

As for *prices* in terms of paper dollars, the *curve described by these was in general very similar to that of the premium on gold, though the two were not identical.* Except in the Western States, which were very isolated, *metallic money*, comprising gold pieces and fractional coins of silver and copper-alloy, *had very soon vanished.*[4] Current purchases were consequently made in paper dollars, and *there was no double scale of prices as there had been in France during the Revolution.* The premium on gold quoted on the New York market[1] was frequently subject to *sudden fluctuations, which had only remote repercussions on the movements of prices.*

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[1] See W. C. MITCHELL, *A History of the Greenbacks*, p. 129.

[2] See W. C. MITCHELL, op. cit., pp. 140, 211.

[3] The law of January 14th, 1875, which was put into operation on January 1st, 1879, enacted that the notes then in circulation were to be redeemed in United States currency when handed in at the counter of the Treasury offices in New York in amounts of not less than $5.

[4] Silver dollars had already disappeared as a result of the premium on silver. A law had been passed on February 25th, 1853, reducing the fine silver content of the subsidiary coins with a view to preventing their export. Thus 2 half-dollars, 4 quarter-dollars or 10 dimes only contained 345·6 grains of fine silver, as against 371·25 to a dollar piece. In January 1862 1 grain of gold was worth 15·35 grains of silver. This being so, the advisability of withdrawing the silver coins from circulation did not become apparent until the premium on gold had risen to more than 3·1 per cent. The newspapers began to record the export of silver coin in July 1862. See W. C. MITCHELL, op. cit., p. 156 *et seq.* See also LAUGHLIN, *History of Bimetallism in the United States.*

The fluctuations in the paper dollars, like those of the assignats until 1793, were inspired in large measure by political, and more particularly military events; which is to be explained by a similar psychological phenomenon. For in the present case the hope of a speedy return to cash payments, or in other words of the redemption of the temporarily inconvertible notes, played a part similar to that performed in the case of the assignats by the prospects of the security constituted by the national property.

The rate of the paper dollar does not appear, moreover, to have had a very close connexion with the variations of the monetary stock as a whole or even of the stock of paper money.[2] It was very intimately connected, on the other hand, with the *decisions* to make new issues, as the *prospect* of new issues was regarded as *a sign of the postponement of a resumption of cash payments.*

It should also be observed that during the Civil War the premium on gold was no longer confused with an *exchange loss*, any more than the agio on gold had been during the French Revolution. External payment requirements are certainly counted amongst the factors which affect the demand for gold. But here *gold was not synonymous with foreign currency*: the United States continued to produce gold (Californian mines) and to export it. It could therefore be obtained on the spot. On the other hand, gold was in demand for local requirements: the Government continued to effect certain payments (for certain kinds of loans) and to require certain payments (for customs dues) in gold.

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[1] The rates quoted on the New York market were telegraphed all over the United States.

[2] W. C. MITCHELL has certain theoretical and factual qualifications to make in this connexion. He begins by observing that a rigorous experimental testing of the working of the quantity theory presupposes not only that the monetary stock is known, but that the velocity of the circulation of the money over the period considered is likewise a known quantity, and that it is also possible to assess the 'transactions to be effected – let us call it production – over the same period'. He goes on to remark that certain elements of the monetary stock cannot be accurately estimated; accordingly, he refrains from adding up the separate items in the tabular statement which he presents (op. cit., p. 179). The chief of these items, expressed in *millions of dollars*, may, however, be reproduced here with their totals added up.

	1860	*1861*	*1862*	*1863*	*1864*	*1865*	*1866*
Gold coin	184	245	22	22	22	22	22
Bank-notes	207	202	183	238	210	288	301
Greenbacks	—	—	96	387	447	431	400
Old demand Treasury notes	—	—	53	3	—	—	—
	391	447	354	650	679	741	723

Finally, gold was, of course, needed for the execution of certain private contracts,[1] or with a view to saving, and the demand for it was smaller or greater according as the prospects of a resumption of the convertibility of the notes seemed more or less remote.

Where *price movements* were concerned, the rise which occurred during the war was attributed by contemporary observers to many and various causes, such as the purchases made by the Government, the disappearance from the market of produce from the South, the increase in dues, particularly in customs duty, the rise in wages, and above all the quantity of money. If we begin by setting aside this last factor, it looks as though we can allow the others to stand, after devoting a few brief observations to them. Wages, for instance, followed the rise in prices at first, but they subsequently enhanced it; the increased demand on the part of the Government, on the other hand, was to some extent offset by a reduction in the demand from other quarters, especially as the purchasing power of the public became more and more reduced by heavier taxation. But the production of articles of private consumption must obviously have been reduced to some extent owing to the war.

As regards the quantity of money, this had been substantially increased, as we have seen, by the issues of paper money, but we must remember that metallic money had disappeared. It would seem, then, that a particularly noteworthy cause of the rise in prices between 1862 and 1864 was the disequilibrium between supply and demand, caused both by an artificial increase of purchasing power and a falling off in supply owing to the war. *We must remember, however, that monetary stocks continued to increase in 1865, whereas the premium on gold was reduced by nearly half.*

There is one final factor which must inevitably have exercised a decisive influence on the course of prices during this period, namely the *agio on gold.* Although in this case the agio did not essentially imply an exchange loss, the fluctuations of the exchange with countries with sound currencies were nevertheless very close to those of gold itself, for a draft drawn on such countries was equivalent to a claim due in gold. Consequently, the prices of *imported products,* which had to be paid for in gold or in drafts expressed in currencies at par with gold, *naturally became dearer in proportion to the premium on gold.* Furthermore, some export products also tended to become dearer owing to the higher prices in paper dollars obtained from their sale abroad. Conversely, a reduction in the premium tended, after a certain lapse of time, to depress prices. These factors would seem to account in a very large measure for the constant parallelism between the curve traced by price movements and that of the agio on gold during this period. See the graph on the following page.[1]

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[1] The fact that the notes had been declared to be a forced currency had the effect of making it possible for debtors to discharge their old debts in paper dollars, the inconvertible notes being lawful currency, for as a rule the creditors had neglected to stipulate payment in gold or metallic money. But the inclusion of such stipulations in new contracts was not prohibited.

The experiment in paper money carried out by the United States at the time of the Civil War was a complex one, and it combined various features of the two experiments which preceded it. Firstly, as in England in 1797, the convertibility of bank-notes was suspended in order to ward off a public panic. To the man in the street a note was not money; it was still only a promise to pay in cash, and its value was measured by the extent of the public's belief in the promise being kept – an attitude which is perfectly comprehensible when it is remembered that there were many banks of issue, not all equally creditworthy.

The next step, as in France during the Revolution, was the issue, for the financing of public expenditure, of Government notes, the chief of which, the greenbacks, were inconvertible from the outset, though it was hoped that they would be repaid in cash after the war.

The essential difference between this issue of Government notes and the creation of the assignats was that this later experiment was successful. And it succeeded because the State was able to obtain the normal financial resources necessary for the carrying on of the war – taxes and loans – before the issues of notes had assumed such proportions that public confidence in their eventual redemption had vanished. The depreciation was at first no less serious, indeed it was more serious,[2] but after new issues of greenbacks had practically ceased, the trend of events was sufficient to push up their rate and that of the other inconvertible paper.

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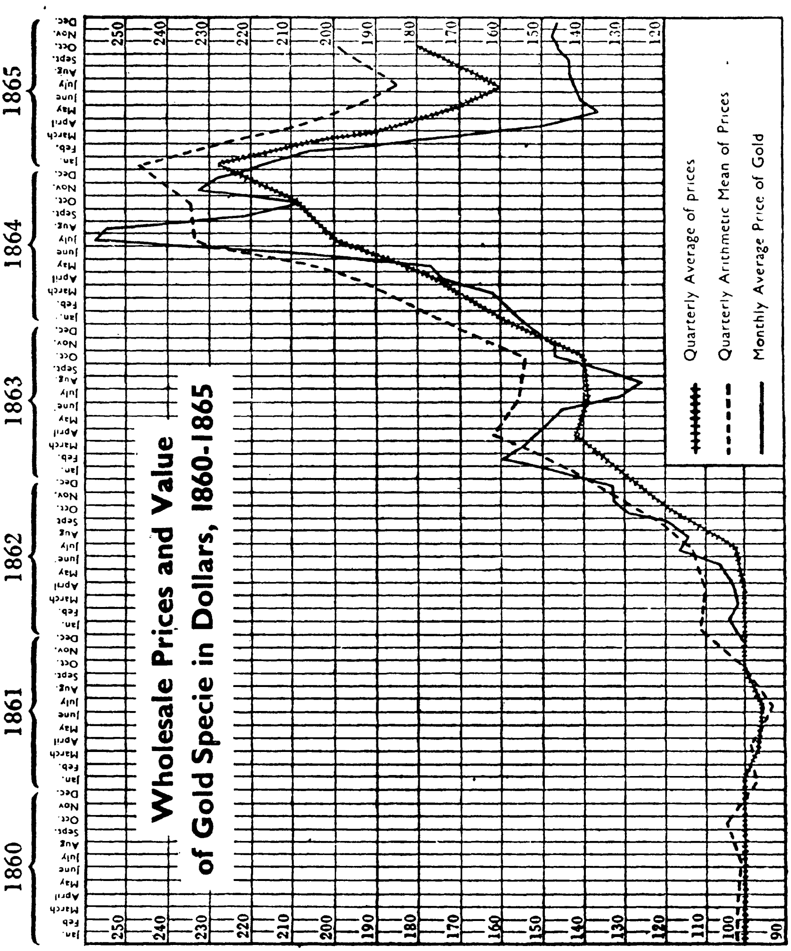
[1] Taken from the work by Mitchell already referred to, p. 277. It will be noticed firstly that price movements appear to be more gradual than those of the premium on gold, the latter being more sensitive to psychological influences; yet the graph shows quarterly averages for prices and monthly averages for the premium on gold. It will also be observed that the average rise in prices continues until the beginning of 1865, whereas the premium on gold suddenly declined in the middle of 1864 with the cessation of hostilities. It will be seen from Appendix B to the book, however, that the prices of imported products followed the premium on gold very closely and for the most part declined similarly from the middle of 1864. As regards home products, their scarcity presumably continued to make itself felt until production became normal again.

It is somewhat surprising that the *inevitable* reaction of the premium on gold on the prices of imported products, and its possible reaction on the prices of export products, should not have been included by so knowledgeable a writer as Mitchell amongst the causes of the price fluctuations registered in the United States during this period.

[2] The depreciation of inconvertible paper money reached its maximum in the United States at the end of two and a half years (a rate of 38·7, or a loss of over 60 per cent, in July 1864), and the assignats did not register a correspondingly high percentage of loss relatively to metallic money until 1793, at the beginning of the fourth year of the experiment.

Premium on Gold and Price Movements in America during the Civil War



This graph is an exact reproduction of that established by W. C. Mitchell in the work quoted.

In the case of the United States, as in that of Great Britain, the premium on gold gradually declined as the prospect of a return to cash payments became imminent, and *vanished with the actual resumption of convertibility, without any appreciable monetary contraction.*[1]

It would seem, however, that in the United States the premium on gold was primarily in the nature of an internal agio – which would make it similar to the agio on the assignats – whereas in England it seems to have been more in the nature of an exchange loss.

§5. Forced currencies and exchange loss in Europe during the nineteenth century. The case of Austria

Generally speaking, after the Napoleonic Wars the European nations enjoyed stable systems of metallic money and exchange during the nineteenth century. A few countries did at certain periods revert to a system of inconvertible paper money accompanied by fluctuating exchanges – though these did not cover a very wide range. The most noteworthy instances were Italy, Greece, Spain, and Portugal, and, for a longer period, Russia and Austria.

The two last-named countries merit our especial attention. The Russian monetary unit was in principle the silver rouble, weighing 20 grammes, nine-tenths fine. Silver was accepted for free coinage, and gold coins were taken into the circulation at a ratio of 1 to 15·4958. But Russia, who had had a large fiduciary circulation since the seventeenth century, resorted in addition, in the nineteenth century, to the use of paper money on a large scale. Numerous issues were made, and for a long time the value of the paper rouble fluctuated incessantly relatively to the metallic circulation, at the same time gradually declining. In 1893, however, to counter the increasing rise in silver, the Russian Government put an end to the free coinage of the metal, at the same time prohibiting the introduction of foreign silver coin into the country.

The paper rouble had by then lost approximately a third of its original value. The Finance Minister, continuing the policy of his predecessor, attempted first to stabilize the rouble exchange at this level, and then to make preparations for Russia to pass over to the gold standard.

At an exchange rate of 1½ paper roubles for 1 gold rouble, the paper rouble was worth 66·66 gold kopecks, that is, 2·627 francs or 2·16 marks. In order to maintain the exchange, or in other words to make the conversion of the rouble at this rate effective, external loans were obtained and used to constitute a 'gold fund', really a stabilization fund, which bought drafts on foreign countries and also provided drafts for foreign payments at the official rate. The Russian Government also operated on the foreign markets where the rouble was bought and sold. On the Berlin market, in particular, it was possible, thanks to the assistance of an important German bank, to maintain a rate of 2·16 marks to one rouble.

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[1] The authorities, influenced by Ricardo's doctrines, made several ineffectual attempts to reduce the stock of money. But they encountered opposition from business men and from the general public, who were suffering from the economic depression and the fall in prices. In the event the reserve of real money was not appreciably affected, though it is possible to regard this stability in the volume of monetary media, against a background of increasing population and production, as equivalent to a contraction.

In 1897 the stabilization of the rouble at this rate was given effect by a law which at the same time established the gold-standard system in its most orthodox form. From that time onward gold 15-rouble pieces were coined and put into circulation, and the Bank of Russia assumed responsibility for the conversion of the notes into gold. The silver coins now became merely token money with a limited legal tender power. As for the notes, their conversion into gold was now effected by the Bank of Russia, and their issue was also strictly regulated: the first 600 million roubles issued had to be backed by a gold reserve of not less than 300 millions, and all supplementary issues had to be backed by an equal quantity of gold.

This operation, which was the result of long-term planning, met with complete success, and from that time the Russian rouble took its place amongst the leading gold currencies.

But the most remarkable thing about the monetary reform carried out in Russia at this time was not the finale of the change-over to the gold standard. It was rather the way in which the preliminary stabilization of the rouble was achieved. The plan devised involved neither a systematic reduction in the quantity of notes issued nor a revaluation of the paper rouble. *It was really stabilization at the existing rate of exchange.* And the stabilization had become operative even before the rouble actually became convertible into gold, by intervention on the exchange market in the shape of purchases of bills on foreign countries at the desired rate and their resale at much the same rate. Foreign credits were also obtained to provide the market with the extra drafts required when the balance of payments showed a deficit.

We shall see later on how this method of stabilization, which was adopted by Russia as a transitional measure, was at a later stage to become a device for the direct convertibility of a domestic paper currency into foreign currency.[1]

The case of Austria is somewhat similar to that of Russia, but even more characteristic.[2] At the time of the Napoleonic Wars Austria had

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[1] Works to be consulted on the subject of Russian currency are: A. WAGNER, *Die Russische Papierwährung*, and ETÉOCLE LORINI, *La Réforme monétaire de la Russie.*

[2] In this connexion see CARL MENGER, *Der Uebergang zur Goldwährung*; ETÉOCLE LORINI, *La Questione della Valuta in Austria Ungheria*; W. SUMNER, *Austrian Paper Money*, in *A History of the American Currency*; A. SPITZMUELLER, *Die oesterreichisch-ungarische Währungsreform*; SUBERCASEAUX, *Le Papier-Monnaie.*

had a paper currency issued by the State, which had been issued in large quantities and had become seriously depreciated, though the number of the notes and the scale of their depreciation had not been anything like so vast as in the case of the assignats.[1] In 1816 the National Bank of Austria was created, and its notes gradually replaced those issued by the State.[2]

In 1848 the *cours forcé* was again proclaimed, and the notes began to lose their value relatively to metallic money. Austria's monetary unit was the silver florin; at 90 florins to a kilogramme of fine silver the florin contained 11-1/9 grammes of silver. Consequently, the agio which arose on Austria's paper money took the form in exchange quotations of a premium on silver. The premium rose to 41·25 per cent in 1861, declined to 8·32 in 1865, and had risen to 20·38 per cent in 1871.

Up to that time the premium calculated in relation to silver was very much the same as if it had been calculated relatively to gold, the exchange ratio between gold and silver being, as we have seen, very stable. But when upon the disappearance of bimetallism silver began to depreciate relatively to gold, *the exchange loss on the paper florin was much smaller in relation to silver than in relation to gold. In 1878 this loss – or, in other words, the premium on silver – disappeared.* Other countries began to pay their debts to Austria in silver, since it was no dearer to buy it than to buy drafts payable in paper florins. Silver was even brought into the country in large quantities to be coined, and the Austrian Government countered this by *suspending the free coinage of silver.*

From that time Austria had a *stock of money made of paper and silver*, but her monetary system was *no longer a silver-monometallist one* even in theory. As a result of the suspension of free coinage *the silver import point no longer existed, nor was the silver export point in operation*; for while the price of silver was declining, the exchange rate of the florin behaved like that of a *fluctuating paper currency, but without declining to a level corresponding to a silver export point.*

This new state of affairs manifested itself in a reversal of the premium. It was now the paper florin – money without any 'intrinsic' value – *which commanded a premium over the silver florin.* A disconcerting phenomenon, on the face of it, which greatly intrigued many economists of the period, and to which we propose to revert at a later stage.[1] Let us content ourselves for the present by saying that it meant that under this system, the predominant feature of which was the existence of a large stock of paper money, there was no compulsion to have recourse to the reserve of silver for external payments.[2]

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[1] Between 1796 and 1811 the amount of the issues increased from 46 to 1,061 millions, and the price of the silver florin in paper florins rose from 100·25 to 1,200. In 1811 new notes were issued, which were exchanged against the previous ones at a ratio of 1 to 5. These depreciated still further between 1812 and 1817, at a ratio of 100 to 333.

[2] The National Bank offered the exchange of Government notes into convertible notes on the following terms: for 140 florins in Government notes, 40 florins in bank-notes and a 100-florin bond bearing interest at 1 per cent. But the public demanded the immediate redemption of the new notes in cash, and the operation had to be suspended and was not resumed until a few years later.

And when, in 1891, the Austrian Government turned its attention to monetary reform designed to put the gold standard into operation, it was decided to adopt a monetary unit which would have a par value relatively to foreign gold coins *almost equivalent to the average exchange rate of the florin between 1879 and 1891.* A law was passed on August 2nd, 1892, creating a *gold crown, equal to half a florin* and worth fr.1·05 at par.

But this law did not compel the National Bank to convert its notes at sight. Its metallic reserve was composed in the main of silver coin, and its gold reserve was very modest in size; these were supplemented, however, by *holdings of foreign bills.* The Austrian exchange continued to fluctuate for some few years. But *by utilizing funds made available in foreign centres by external Government loans, the Bank gradually succeeded in gaining control of the exchange market, and from 1901 onward the fluctuations of the Austrian crown were kept within limits similar to those constituted in the case of gold currencies by the normal operating of the gold points.*

It was in this way that the Austrian National Bank instituted a system based on money which was convertible at a fixed rate into foreign currency without passing through the intermediary of gold.

§6. Paper money in South America. The Argentine conversion fund

South America was long regarded as the natural home of paper money. It is true that since the beginning of the nineteenth century the South American nations have frequently been faced with financial difficulties which have driven one after another to have recourse to the issue of inconvertible notes.[3] It would take too long to recount here, even in summary, the vicissitudes of their monetary history, highly instructive though the tale would be. We shall confine ourselves to giving a brief account of the case of the Argentine Republic, because the experiment in stabilizing paper money which was successfully carried through there at the close of the nineteenth century led eventually to the establishment of a new monetary system exactly similar to the gold exchange standard which was being put into operation at the same time in India.

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[1] See Part III, Chap. I, §2, and Chap. II, §1.

[2] Spain found herself in exactly the same position after 1873. As the Bank of Spain considered its gold reserve inadequate to guarantee the convertibility of its notes into gold, it took shelter behind the last remnants of bimetallism which had survived the suspension of the free coinage of silver; that is to say, behind the unlimited legal tender power of the 5-peseta pieces, and offered facilities for the conversion of notes into silver – which rendered them practically inconvertible, as silver, which was becoming more and more depreciated, was not in request for external payments. Thus the peseta rate on the exchange market stood at a level between the vanished gold point and a silver point which was only reached for a very short time in 1898, at the worst period of the Cuban war.

[3] See SUBERCASEAUX, *Le Papier-Monnaie.*

Argentina had had inconvertible notes since the beginning of the nineteenth century, and had experienced the disadvantages of a paper-money system and the instability of the exchanges which it brought in its train. In 1863 the rate of the paper piastre had declined to such a point that 100 gold piastres could be exchanged for 2,500 paper piastres. In 1867 an attempt was made to stabilize the exchange at this same rate of 25 paper piastres to 1 gold piastre. An *Exchange Office* was set up, which effected the *conversion* of gold into notes and notes into gold at this rate. It functioned successfully until 1876.

There was then a return to inconvertibility and to exchange fluctuations tending in a downward direction. The notes had gradually lost two-thirds of their value when, in 1890, a scheme was started for the amortization of the fiduciary circulation by means of a conversion fund. But a violent crisis set in and prevented the conversion law from taking effect. Then, while it was in course of liquidation, the exchange loss grew smaller and smaller, and the premium on gold, which had averaged 232 per cent in 1892, had fallen to 156 per cent by 1898.

It was this 'improvement' in the Argentine exchange which led to a move to stabilize it. For some time past Argentine exports had benefited by the exchange loss; for her products – wheat, wool, etc. – which were sold in sterling at world market prices, fetched correspondingly higher prices in Argentine piastres in proportion as the piastre was more depreciated relatively to gold, whereas cost prices were not affected in the same proportion. The effect of the reduction in the premium on gold was, on the contrary, unfavourable to exporters; that is to say, to the agricultural producers. Accordingly, a law was passed on November 4th, 1899, providing in the first place for the conversion 'of the whole of the existing fiduciary issue of notes which are legal tender into the domestic gold currency at the rate of one piastre in the domestic legal tender currency to 44 centimes in domestic coined-gold currency'.

Having regard to the rates which had ruled in the previous year, it was stabilization accompanied by a certain 'devaluation', the object being to maintain an exchange rate which would be favourable to exporters.[1]

A later decree was to fix the date of the application of the new monetary system, and a conversion fund was to be constituted to ensure its functioning. In the meantime a *Conversion Office* was to issue notes, which would be legal tender, in exchange for the gold offered it, at a rate of 44 centavos for every paper piastre, and conversely to supply the gold thus received in exchange for the paper money, at the same rate. The first operation took place on December 9th, 1899, when the Conversion Office received 100 gold piastres, in return for which notes were handed over.

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[1] For further details and bibliography, see BERTRAND NOGARO, *La Monnaie et les Phénomènes monétaires contemporains*, 2nd Ed., p. 69.

As Argentina's balance of payments was generally favourable, gold was offered to the Conversion Office for the purpose of obtaining Argentine currency, i.e. legal tender notes, and with the gold so obtained a fund was constituted which enabled her to meet the demand for the gold required for external payments.[1]

The experiment carried out in the Argentine Republic in the last year of the nineteenth century led eventually to an innovation of great importance where the functioning of monetary systems is concerned. Regarded firstly from the standpoint of the convertibility of notes, the method whereby this was effected was based on a principle which was a much more rational one than that which had previously governed legislation relating to banks of issue, where the rule had been to lay down a fixed ratio between the maximum issue authorized and the metallic reserve. The purpose of this rule – which occasionally defeated its own object,[2] – was to facilitate the 'repayment' of the notes. But in modern times notes really amount to an internal currency; the holder no longer demands their repayment in cash; the most that can happen is that the *conversion* of the notes into metal is asked for with a view to *external payments*. The point is, therefore, that the metallic reserve must be *proportionate not to the amount of the note issue, but to any deficit which may arise on the balance of payments*. It is this principle which must determine the constitution of the cash reserve, or rather of the conversion fund.[3]

On the other hand – and this is still more important – it must be remembered that Argentine monetary reform brought into being a new monetary system identical with the gold exchange standard which was being put into operation at the same time in India, with the exception that Argentina's internal currency reserve was a paper one and not a silver one.[1]

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[1] Shortly afterwards a *Conversion Office* was also created in Brazil. But it only converted its own notes, which meant that the gold export point did not operate where the others were concerned. On the other hand, it could only issue a very limited amount of notes in exchange for the gold received, which led to the suspension of the gold import point as well.

[2] See BERTRAND NOGARO, *Cours d'Economie politique*, Vol. 1, 4th Ed., p. 477, footnote.

[3] It should be observed, of course, that this convertibility mechanism is an automatic one, whereas a bank of issue does not confine itself to providing for the convertibility of notes into precious metal, but can in addition, more especially by varying its discount rate, prevent a drain of the precious metal to foreign countries. The bank of issue can therefore continue to exercise its monetary function side by side with the organization which is responsible for the conversion.

It was in reality a *new gold-currency system* which was created in this way at the very end of the nineteenth century, a system of gold-monometallism, functioning as such *in external exchanges*, with an internal currency of silver or paper, which might be termed, in contradistinction to the traditional gold-standard system, the *gold-reserve system.*

Here the stabilization of the paper currency was achieved by the changeover to the gold standard. The experiment carried out a few years before by Austria showed, however, that a paper currency which was inconvertible by definition could become convertible at a fixed rate into foreign currency. All that was necessary was for a directing organization to purchase, at a constant and predictable price, drafts or bills drawn on foreign centres whose currencies were themselves sound and to supply the exchange market with drafts at the same – or approximately the same – price when commercial drafts were in short supply. By this means the exchange of the paper currency was stabilized as effectively as if it fluctuated between the narrow limits of the gold points.

To sum up, we now witness the emergence, at the end of the nineteenth century, of a new gold-standard régime with an internal currency of silver (India) or of paper (the Argentine). We have already seen how Austria created a precedent by establishing a *new system of paper money directly convertible into foreign currency.* We shall finally witness the creation of systems of joint convertibility, based partly on gold and partly on 'portfolios of devises'. Hence, as we proceed with our account, we shall very soon have to discard our previous classification of the various monetary systems into their main categories according to whether or not they are on a metallic basis, and replace it by a new and more complex one.

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[1] It should be noted, incidentally, that it is easier to make the system work with an internal paper currency than with a silver one, for in the event of a rise in silver it may become more profitable to export it than to invite offers of bills on foreign countries at the official conversion rate, and in this case a fluctuating silver point is substituted for the gold point. See below, p. 100.

CHAPTER III

THE EVOLUTION OF CURRENCY SYSTEMS FROM THE BEGINNING OF THE TWENTIETH CENTURY

§1. The short reign of the gold standard

After the suspension of the free coinage of silver in 1873 a number of bimetallist countries had virtually gone over to the gold standard. Gold, which was now the only metal accepted for free coinage, was indeed the only currency common both to those countries which had previously been bimetallist and to the other countries; and though it is true that certain silver coins continued to be unlimited legal tender, it was sufficient for the bank of issue to fail to make use of its power to redeem the notes in silver for them to be convertible into gold. The exchange rates of such countries were consequently confined within the limits of the gold points.

On the other hand, *Germany*, *Russia*, and *Japan* had adopted the gold standard. *India* and the *Argentine Republic* had subsequently, as we have just seen, stabilized their exchanges on a gold basis, thereby bringing into being a new régime of gold-monometallism.

International exchanges, however, had continued for the most part to be dislocated since the disappearance of bimetallism; and apart from the South American countries which were on a paper-currency system, there were many other countries whose exchanges fluctuated with the silver rate – Mexico and the Far Eastern countries – or who were experiencing large-scale fluctuations and substantial exchange losses within the limits set by the depreciation of silver.

In 1903 a commission comprising delegates of the United States and Mexico was appointed to study Indian currency reform, the idea being to restore stable exchange relations between gold-currency and silver-currency countries. As a result of this investigation[1] the United States Government proceeded to institute currency reforms in the *Philippines*. An *Exchange Bureau* was set up at Manila, which was to supply drafts on New York at a fixed rate, and a similar bureau was established at New York to supply drafts on Manila at the same rate. The exchange between New York and the Philippines was thus operated on a system on the lines of the gold-exchange standard in India, with the exception that the exchange rate was here regulated by the purchase and sale of foreign bills at a fixed rate by an official organization instead of by the mechanism of the gold points.[1]

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[1] See the *Senate Report on the Introduction of the Gold Exchange Standard*, Washington, 1904, p. 126, and *House of Representatives, Report on the Introduction of the Gold Exchange Standard*, 1903, p. 399. See also KEMMERER, *Modern Currency Reforms.*

Similar monetary reforms were subsequently carried out in the *Straits Settlements, Siam, Cuba,* and *Mexico.*[2] Only a small number of countries remained outside this reform movement, notably China and French Indo-China.

Thus, by about 1904, international monetary relations, which had been seriously disturbed by the disappearance of bimetallism, had been largely stabilized as a result of the general adoption of the gold standard, either in its orthodox form or according to the new formula of the gold exchange standard. It was only at this moment that the gold standard commanded a position of ascendency similar to that enjoyed by bimetallism for nearly three-quarters of a century. For though the latter was less generally adopted, by its very nature it ensured stability in the monetary relations between all countries with metal currencies, whether gold or silver. Furthermore, *the reign of the gold standard was a short one: it was to come to an end in 1914.*

§2. The exchange crises during the 1914-1918 war

The outbreak of the war in 1914 impelled not only the belligerent countries but many others besides to make their notes either *de jure* or *de facto compulsory legal tender,*[3] *and to place an embargo on the export of gold.* This measure was applied even in non-belligerent countries which were at some distance from the theatre of war, such as Scandinavia, and even in the Argentine and Brazil, where the conversion offices ceased to be obliged to furnish gold in exchange for notes. This was a signal for the general disappearance of the gold export points and a consequent general instability of exchanges, with a downward tendency in the case of countries whose balance of payments was adverse.

In France the exchange loss did not make itself felt at once; for some little time the French franc even commanded a slight premium, which is to be explained by the fact that in the opening stages of the war

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[1] The regular functioning of this mechanism was very soon interrupted by a rise in silver. The new Philippine piastre had been coined at a ratio of 1 to 32 as between gold and silver, which was fairly close to the commercial ratio. Accordingly, when a rise in silver occurred, it became more profitable to export silver for external settlements than to purchase bills at the Exchange Bureau. See BERTRAND NOGARO, *Les dernières Expériences monétaires et la Théorie de la Dépréciation,* Revue Economique Internationale, September 1908, and *La Monnaie et les Phénomènes monétaires contemporains,* 2nd Ed., p. 70 *et seq.*

[2] The ratio between gold and silver having similarly been fixed at 1 to 32 in Mexico, it became profitable to import gold into that country in order to export silver, with a resulting replacement of the silver reserve by a gold reserve.

[3] In Great Britain they were never officially declared to be compulsory legal tender, but the Bank of England systematically obstructed all attempts to convert its notes into gold.

France repatriated capital and had no deficit to be liquidated abroad.

A much more remarkable hypothesis took concrete shape at one particular moment, namely the suspension not only of gold exports, but of gold *imports*. This led to the disappearance of the *gold import point* itself, and consequently, where the balance of payments was favourable, to an *appreciation* of the domestic currency to above the parity rate. This measure was taken in Sweden in 1916,[1] which meant that Holland, which had remained on the gold standard, *no longer had a stable exchange* with Sweden, another country with a gold currency.

The monetary instability consequent upon *the almost universal disappearance of the gold points, or at least of the outward points*, was aggravated by another factor – the *rise in the price of silver*. The silver-currency countries which had adopted the gold exchange standard had fixed the new parity at a rate fairly close to the rate of exchange ruling when the reform was carried out, up to which time, as we have seen, the latter had followed the rate of silver. As we noted above, they ran the risk, in the event of a rise in silver, of silver being used – and used frequently, despite the embargo on exports – in preference to the drafts offered at the official rate for external payments. Now, the rise in silver was such that even India's currency system was affected by it, although the parity of the rupee had been fixed in 1893 at a comparatively high level. Not only was silver exported by India, the embargo notwithstanding, when she had to make payments to other countries, but silver also had to be purchased at a rate much higher than 16 pence in order to maintain India's monetary reserve.[2] India's exchange consequently ceased to be restricted to the limits of the gold points, and fluctuated within the uncertain limits constituted by unstable silver points.

Thus the outbreak of the world war of 1914-1918 was the signal, where currencies were concerned, for a universal exchange crisis.

With the exception of the silver-currency countries with which we have just dealt, and a few neutral countries such as Holland, who though suffering from the general instability of the exchanges had remained on the gold standard, this period may be said to have been characterized by a *general extension of the system of paper money*. Actually, *the immobilized gold reserves had no immediate reaction on the functioning of*

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[1] The idea behind this embargo on gold imports, which was imposed at the request of the Riksbank, was an extremely naïve one, i.e. to make gold currency scarce in order to prevent a rise in prices. But the result aimed at was achieved up to a certain point for a much more positive reason, namely that as the domestic currency was at a premium owing to the disappearance of the gold import point, imported goods, other things being equal, became cheaper.

[2] Owing to the habitual hoarding of money by the native population of India, silver had constantly to be brought into the country to replenish her monetary reserves.

currency systems, which were dominated by the existence of inconvertible paper.

As regards the belligerents, who were compelled to make large purchases abroad, this state of affairs inevitably found expression in a growing tendency towards a depreciation of the domestic monetary units. An attempt was made, however, to counteract the tendency by the adoption of a suitable monetary policy; and here a distinction must be made between the two groups of belligerents.

France and England, who both possessed large holdings of foreign securities, made use of these wherever possible to build up assets abroad, particularly in the United States. They likewise obtained credits from the United States, the Argentine, and various other countries. And thanks to the intervention of bankers who acted for their account on the leading exchange markets, they succeeded in supporting the rates of their currencies. Their financial resources were beginning to be exhausted when the United States eventually came into the war. The American Treasury itself then began to make loans, and opened large credits for England and France.

Thanks to the credits opened for it in foreign countries, notably in England and the United States, the *Bank of France was able to supply the exchange market with drafts* and to exercise an effectual influence on the rate of the franc.[1]

So, *for the Allies*, although their metallic reserves were immobilized, the war years *were not a period of paper currencies left to their own resources*, but of paper currencies the rate of which was *controlled* and *supported*, thanks to the funds made available in foreign currencies, by continuous action on the exchange markets. Hence the *fluctuations* of the various Allied currencies during this period were *on a comparatively small scale*.

The exchange loss on the French franc scarcely exceeded 10 per cent compared with sterling, 12 per cent relatively to the dollar, and 31 per cent as against the Swiss franc and the Dutch florin. From the time of America's entry into the war the loss on the French franc relatively to the dollar rarely exceeded 6 per cent, and that on sterling 2 per cent. As for the dollar itself, it lost up to 24½ per cent in relation to the Swiss franc, but only for a very short time (June-August 1918) just before the end of the war.

It should be remarked that, *thanks to the support given to the French exchange, the external depreciation of the franc was considerably less*

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[1] It should be noted, however, that from 1917 there were two exchanges at Paris, the official exchange fixed by the Bank, which was applied to imports deemed worthy of this privilege, and the free market rate. But the Bank also had ways and means of influencing the latter, so that the margin between the two rates was not very wide.

than its internal depreciation, for prices, after registering a progressive rise, had gradually risen to three times their original level by the end of the war.

Where Germany and her associates were concerned, the exchange crisis developed earlier and was more serious. At the end of 1914 the mark had lost 10 per cent at Geneva and the Austrian crown 16 per cent, whereas the franc and the pound were still slightly above par. The mark had lost 20 per cent by the end of 1915 and 34 per cent by the end of 1916, and by the middle of 1917 the loss amounted to 50 per cent. After rallying when hostilities with Russia ceased, it again declined, and when the Armistice was signed the loss on the mark stood at 40 per cent.

The difference in the position of the belligerents was due chiefly to the fact that Germany was far from possessing the enormous resources held by France and Britain in the shape of foreign securities, and that she had greater difficulty in obtaining external credits for herself and her associates.

The Government of the Reich did its utmost to make the best possible use of the exchange at its disposal by creating, at the beginning of 1916, a *Central Foreign Exchange Bureau,* to which all bills on foreign countries had to be handed in, and to which anyone requiring means of exchange, direct or indirect, had to apply. The Bureau itself fixed the rate of exchange. The intervention of this institution would appear to have helped to check the fall of the mark, but the concentration of the means of external payments failed to support the exchange whenever the exchange available became insufficient to meet all the demands made on it. On the other hand, whilst the Central Foreign Exchange Bureau fixed a rate of exchange between the mark and foreign currencies, *the mark was quoted on foreign markets at rates which were appreciably lower.* Accordingly, German exporters were asked not to allow their foreign debtors to discharge their debts by selling on their own markets mark drafts drawn on Germany for remittance to them.[1] But however small the amounts involved, it was the quotation of the mark on foreign markets which was recorded as the index of the value of the mark in relation to foreign currencies. We shall see later how the experiment of a Central Foreign Exchange Bureau was to be resumed subsequently in a more rigid and efficient form. But the fluctuations and the exchange loss which befell the mark and the currencies of Germany's associates during this period may be regarded as typical of a paper-currency system in the absence of a mechanism of regular convertibility for purposes of external payments.

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[1] See CH. RIST, *Les Finances de Guerre de l'Allemagne.*

§3. Aggravation of the exchange crisis after the 1914-1918 war. The fall of the franc and the collapse of the mark

When hostilities ceased in November 1918 the rates of all the exchanges, including the mark, the crown, and the rouble, rose, speculators having summarily interpreted the end of the war as a circumstance likely to lead to a recovery of the exchanges. In the event, the dollar speedily rose and was even quoted in Geneva at a premium over the Swiss franc. Sterling declined at the end of 1919, but was not long in recovering. The French franc and the Italian lira, on the other hand, which fluctuated in almost parallel curves for some considerable time, were very soon to achieve a rate of depreciation unknown during the whole of the war: at the beginning of 1919 the quotation for the French franc at Geneva showed a loss of more than 50 per cent, and the loss was to remain at between 50 and 60 per cent during the whole of the year. It weakened further, amidst many fluctuations, until the beginning of 1924. On May 10th of that year the dollar was quoted at fr.28·13 in Paris – the parity rate being fr.5·18. Then, after a rally followed by further fluctuations and a further fall, the franc reached its lowest point in June 1926, when the dollar was quoted at 48 francs and the pound at 240!

Where the Central Powers were concerned, the German mark and the Austrian crown both gave way. At the end of 1919 the loss on the latter at Geneva was 95 per cent. The mark lost 90 per cent of its value and remained at approximately this level until the beginning of 1921. But it fell again upon the presentation of the Reparations account, and the quotation for 100 marks, which were still worth approximately 22 francs in Paris in April, fell to 14 in September and then suddenly, as a result of the request for a moratorium, went down to fr.9·60 in the October of that year. After having stood at around fr.3·80 from May to June 1922, the rate fell to below 1 franc in September of the same year and then to below fr.0·10 in February 1923 after the occupation of the Ruhr.

After April it dropped at a dizzy speed, and the depreciation of the mark assumed proportions such as to make the history of the assignats pale before it. The dollar rate in Berlin – the parity rate of which was mk.4·20 – soared to 160,000 marks at the beginning of July 1923, and finally, at the end of November, to 4,200,000,000,000 marks. This meant that at that time it took a trillion[1] – a thousand milliard – paper marks to make one old gold mark!

The fall in the Austrian crown, as in the rouble and the Polish mark, was on a much smaller scale. But the currency depreciation in several Central European countries was, generally speaking, nothing short of catastrophic.

[1] A trillion according to the French and American reckoning, or a billion according to that current in Great Britain and Central Europe.

Exchanges remained unstable, moreover, even in most of the countries which had managed to restrict their use of notes and to keep their gold coin. For the embargo placed on the export of gold during the war, which had led to the disappearance of the gold points, remained in force for some considerable time in most of such countries. The dollar was for some time almost alone in representing a real gold currency freely coinable, exportable and importable; it was the *universal standard*, against which the other currencies fluctuated in varying degrees.

This state of affairs, which was so completely at variance with the artless forecasts of speculators, is easily explained. Where countries like France and Italy were concerned, the aggravation of the exchange crisis was due in the main to the *disappearance of the foreign credits* which had served to support the exchange market. Their absence made itself felt all the more inasmuch as their trade balances were in complete disequilibrium, and because they had to secure food supplies and to purchase raw materials and equipment before they could begin to export again. They could, of course, obtain commercial credits, but such credits, which were obtained from day to day, did not, like credits granted by one Government organization to another, constitute a balance-wheel such as was required if the exchange market was to be supported. The leading European currencies were, it is true, long supported by *speculative credits*; that is to say, by purchases of exchange in foreign countries by speculators who persisted in believing in its recovery.[1] However, this bull speculation, which was practically always unsuccessful, eventually died down. Moreover, prices in France, Italy, and Belgium had risen to such an extent that if the exchange had been maintained at its wartime level, exports would have been brought to a standstill.[2]

On the other hand, the intention expressed by the issuing institutions, notably in France, to wait until the exchange had returned to par before resuming a régime of convertible notes, meant in practice that no serious effort was made to support it, with the paradoxical if hardly surprising result that it pursued an increasingly downward trend. It is, indeed, not unusual for a fluctuating currency to tend to decline amidst its fluctuations as long as there is no favourable balance of payments to readjust it. On the other hand, the balance of payments tends to remain adverse until confidence in the future of the domestic currency is restored; the reason being that exporters and other creditors of foreign countries prefer in such circumstances to keep their liquid funds in foreign currencies as long as possible rather than throw their foreign bills on to the exchange market.

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[1] This belief was doubtless based on the avowed intention of the issuing institutions to resume the conversion of notes into gold sooner or later, and on the fact that it was still not realized that the conversion could be effected on a basis other than that of the old parity.

[2] As regards this point, see BERTRAND NOGARO, *Cours d'Economie politique*, 4th Ed., Vol. II, p. 342 *et seq.*, and p. 384 *et seq.*

Finally, there was the difficulty of bringing the financial position back to normal. The governments of many countries were still issuing notes, and all this helped to create a background which was not conducive to a recovery of the exchanges.

Where Germany was concerned, the situation was aggravated by the fact that she had to meet an enormous external debt for reparations. Instead of facilitating the functioning of the Foreign Exchange Bureau, which they regarded as a wartime expedient, the authorities had in the meantime relaxed their control over it, and German exporters, who were anxious about the fate of the German currency, took advantage of this to allow their liquid funds to accumulate abroad as far as possible, thereby bringing the balance of payments into disequilibrium. The first reparations payments, small though they were, could not fail in these circumstances to weigh heavily on the mark, and the various stages of its depreciation did, in fact, roughly coincide with the incidents to which the reparations payments gave rise.[1] But the ever-increasing acceleration in the pace of the depreciation would appear to have been due above all to what has been called 'the flight from the mark'; that is, purchases of foreign exchange not for commercial requirements, but with a view to turning all mark balances, however small, into sound currencies; for as, with the continued fall of the mark, this eagerness to convert marks into foreign currencies became more pronounced and more general, each depreciation engendered further depreciation.

As the mark was collapsing prices were rising and note issues multiplying: a fact which led superficial observers to believe that the mark was repeating on a larger scale the history of the assignats, and which seemed to confirm the orthodox conception of monetary depreciation, at once internal and external, due to the excessive issue of notes, or, to give it its more modern name, inflation.

This conception will be discussed later on.[2] But before we go any further we must get the exact concatenation of events clear in our minds. *Where Germany is concerned, the period of monetary depreciation which began with the end of the war must be divided into two phases. In the first phase*, from the end of 1918 *until about the middle of 1921, there were numerous note issues,*[3] *but the rate of exchange, after falling between the end of 1918 and the end of 1919, remained practically steady*;

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[1] See BERTRAND NOGARO, *Réparations, Dettes interalliées et Restauration monétaire.*

[2] See Part II, Chap. I, §2, and Chap. III, §5.

[3] The aggregate note reserve had increased from 32½ milliards at the end of 1918 to 49½ at the end of 1919, 69 at the end of 1920, and 122 by the end of 1921.

[4] At Amsterdam the exchange loss on the mark increased from about 50 per cent at the end of 1918 to 90 per cent at the end of 1919, and after fluctuating for a time, returned to 87 per cent in June 1921.

as for *prices*, after the sharp rise registered since the outbreak of the war, these *remained practically stable in 1920*[1] and even fell a little in the first half of 1921.

In the *second* phase, however, which lasted from the middle of 1921 until the end of 1923, the exchange declined rapidly and then collapsed, causing a corresponding rise in prices, while the progression of the note issues lagged far behind.[2]

It is precisely this acceleration in the pace of the depreciation which explains the increasingly close link which was henceforward to exist between exchange rates and prices. It was no longer a question merely of the inevitable reaction of the rates of exchange on the prices of imported products and through them on the general level of prices. It was the habit which gradually grew up amongst business men of calculating the prices of all commodities, even of home products, in a stable currency, i.e. in dollars: which meant that the listed prices became merely dollar prices expressed in marks at the rate ruling on the particular day . . . or at the particular hour.

§4. The stabilization of the exchanges, 1923-30

It was inevitable that attempts should be made to combat the serious economic, financial, and social difficulties created by currency depreciation and the chronic instability of the exchanges. But the attempts were slow to materialize. The technique of currency stabilization described above[3] was known only to a very few experts, who had not happened to take part in the deliberations of the governments concerned. There was, moreover, a certain tendency in countries whose depreciation had not been carried to extreme lengths to wait for an automatic and progressive recovery of the exchanges which would some day make it possible to abolish the forced-currency legislation, and they liked to believe that a wise financial policy which would include a return to budgetary equilibrium and a reduction of the volume of notes in circulation would achieve this purpose in the long run.

The first steps towards monetary recovery were taken by countries whose depreciation had assumed such proportions that a remedy had to be found urgently. It was a new state, *Czechoslovakia*, which led the way. The first measure consisted in stamping the Austrian crowns circulating in the country in order to create a national currency unaffected by external influences. The then Finance Minister took advantage of this operation, moreover, to withdraw part of the notes in circulation; for, faithful to the classical doctrine, he hoped that a reduction in the number of monetary units would facilitate their revaluation. But he also endeavoured to constitute a conversion fund.

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[1] At around an index figure of 1,500.

[2] See BERTRAND NOGARO, *La Monnaie et les Phénomènes monétaires contemporains*, 2nd Ed., p. 98. See also A. FOURGEAUD, *La Dépréciation et la Révalorisation du Mark allemand.*

[3] This formed the subject of a study by the present author as long ago as 1908. See BERTRAND NOGARO, *Les dernières Expériences monétaires et la Théorie de la Dépréciation,* Rev. d'Econ. Intern., September 1908.

The effect of these measures was to dissociate the rate of the Czechoslovak crown from that of the Austrian crown and to cause it to rise.

Nevertheless, between the middle of 1919 and the middle of 1921, the rate of the Czechoslovak crown pursued a course almost parallel with that of the mark. But in *October 1921* the *affiliation* between the crown and the mark was *finally* severed, and as the mark slipped down the fatal slope, the Czechoslovak crown moved upward. Finally, from the beginning of 1923 onward, the Czechoslovak crown was practically stabilized at a rate of approximately 34 crowns to the dollar.

This stabilization was due principally to the constitution of a large *portfolio of foreign bills* and to the opening of *external credits,* which the Czech Banking Department utilized, in accordance with the precedent created by the former Austro-Hungarian Bank,[1] by intervening constantly on the exchange market in order to equalize it.[2]

The Austrian crown, after depreciating strongly, was stabilized afterwards by similar methods.[3]

As regards the rehabilitation of Germany's currency, this was not achieved until the end of 1923, at a time when the dollar rate in Berlin had risen to the figure mentioned above (4,200 milliards). A new monetary unit had been created by a Government order issued on October 15th, 1923: this was the Rentenmark, convertible unit for unit into gold bonds, themselves secured by a general mortgage on German land and constituting a fixed-yield investment the interest on which was to represent a specified amount in gold, at a rate of 5 per cent. Thereafter the Reichsbank issued no more notes and confined itself to putting into circulation the new *Rentenbank* notes. But behind this façade other more direct and effective measures had been taken: fugitive German capital had been utilized, with the assistance of American banks, to create a fund, which was discreetly put into operation, and as a result of which the rate of the Rentenmark, which had replaced the old mark at the fabulous conversion rate of one to a trillion, was controlled and stabilized.[4]

Of the countries which had been less seriously affected by the exchange crisis, Great Britain was the first to rehabilitate her currency. It should be remembered, too, that, apart from a notable decline at the end of

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[1] See above, p. 94.

[2] For further details, see BERTRAND NOGARO, *La Monnaie et les Phénomènes monétaires contemporains,* p. 108 *et seq.*

[3] See B. NOGARO, op. cit., p. 124 *et seq.*

[4] See B. NOGARO, op. cit., p. 130 *et seq.*

1920, the exchange loss on sterling had been very small. On the 1920-21 average the premium on the dollar in London had scarcely exceeded 30 per cent, and it had fallen progressively until it had dwindled to almost nothing by 1923. As for prices, the retail price index had touched a figure of 265 for a brief period in 1920. But this was largely due to the boom which had run away with prices all over the world. At the time when the monetary reform was put in hand the rise was not much more than 50 per cent over the 1914 level.

The British monetary authorities consequently decided not to confine themselves to stabilizing the pound, but to *bring it back to its former parity*, and, with this object in view, to return to the gold standard, the pound notes, or the bank money, *being made convertible again unit for unit into gold pounds*. It was considered advisable, however, not to put gold coins back into circulation in England. Accordingly, the Bank's obligation to redeem the notes in cash, which had been suspended in actual practice since 1914, was not reimposed. The Bank was merely asked by the *Gold Standard Act* of 1925 to provide gold bullion on demand (this with a view to external payments) in exchange not only for its notes, but for all fiduciary currency which was legal tender – hence in exchange for the *Treasury notes* issued by the Treasury during the war. And as it was bound under an old regulation to buy gold at a price equivalent to the sterling parity, this meant a return to the gold points and a return to the gold standard under its rejuvenated form of the gold exchange standard.

It was not until the very end of 1926 that the French franc was effectively stabilized, and it was the middle of 1928 (Law of June 25th) before its stabilization was given legal effect by a new statute relating to metallic money and the issue of notes.[1] From the technical standpoint the operation was certainly simple enough. *For the Bank of France had kept an enormous reserve of gold*; where sales to foreign countries were concerned, the rise in internal prices was offset by the exchange loss; the trade balance had now been readjusted for some little time. *All that was needed to smash speculation was for speculators to know that the Bank of France was prepared to intervene in some form or another on the exchange market*. But the Bank had sanctioned the legend that its monetary reserve was untouchable, and consequently frozen in its vaults; all idea of the functioning of the gold standard had been discarded;[2] and

[1] See BERTRAND NOGARO, *Le Nouveau Régime monétaire français*, in the *Revue Economique Internationale* for May 1929.

[2] An enthusiastic publicist voiced the opinion of the man in the street when he explained how the notes 'backed' by gold would necessarily lose part of their value if any of the gold left the vaults of the bank of issue, and he congratulated the Bank on refusing to part with its reserve 'for the Government to fool away'. (See *Nouveau Siècle* for Saturday, May 12th, 1926.) Furthermore, similar views had been expounded by a geodesist about the same time, and with equal competence, to the *Académie des Sciences*!

when, at the beginning of 1924, a French Finance Minister eventually saw fit to take action against reckless speculation, he called in the assistance of a foreign bank to obtain the 'striking force' necessary to crush it.

It was not until December 23rd, 1926, that a representative of the Bank of France on the Paris Bourse was deputed[1] to make the following brief statement: 'I am a buyer and a seller at 122·25.' This meant that the Bank henceforth undertook to buy all the sterling which it was offered and to sell all the sterling required of it at the above rate. Sterling symbolized all foreign currencies, and this was all that was needed to make stabilization a *fait accompli.*

It was given effect, at very nearly the same rate, by a law passed on June 25th, 1928, which created a new franc, now defined as a gold monetary unit of 65·5 milligrammes, nine-tenths fine. From that time the parity between the franc and the pound was equivalent to a rate of fr.124·21. *The Bank of France was henceforward bound to buy the gold* which was offered it at a rate of 1 franc for 65·5 milligrammes, though it was authorized to deduct an amount corresponding to the cost of minting. It had, on the other hand, to effect the reciprocal conversion of notes into gold, but it was only entitled to do so 'at its head office and *for a minimum quantity to be fixed by decree*'. This regulation was manifestly designed, though this was not explicitly stated, to restrict the convertibility of notes to *requirements for foreign payments.* There was, however, nothing to prevent new gold coins being subsequently put into circulation.

With this qualification, and in its immediate application, the currency law of June 25th placed France, too, on the gold exchange standard – in the original and correct sense of the term.[2]

While the neutral countries – Holland, Switzerland, and Scandinavia – were gradually returning, like the United States and Great Britain, to the gold standard *on a basis of the old parity,* those countries which were compelled to find a remedy for the exchange crisis had one after the other endeavoured to stabilize their exchanges by *officially writing off all or part of the depreciation on their currencies.* Few of them, however, had gold reserves large enough to enable them to resume the conversion of their notes into gold as France and England had done; so they had attempted to regulate the rate of their currency relatively to the pound or the dollar by making use of their holdings of foreign exchange and their external credits. Holdings of sound foreign currencies were even

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[1] As the result of a decision taken by M. Poincaré, with which the present writer was not unconnected.

[2] See BERTRAND NOGARO, *Le Nouveau Régime monétaire français,* Rev. Econ. Intern., May 1929.

– in Belgium, for example – occasionally utilized by the banks of issue in the same way as metallic money as backing for notes.

Thus by 1930 there had been an almost general return to stability of exchanges throughout the world, either by the adoption of the gold exchange standard according to the Indian formula, or, more frequently, by a *convertibility mechanism consisting in the setting up of a regulating organization whose duty it was to supply and purchase at a fixed price bills on foreign countries* (this régime has also frequently been referred to as the gold exchange standard by writers of recent French works on economics). So the general restoration of stability to the exchanges was not achieved entirely by a return to a universal gold standard, but rather by the almost universal putting into operation of a system of interconvertibility at a fixed rate of the various national currencies.

§5. The devaluation of the pound (1931) and the dollar (1933). Exchange equalization funds and managed currency. Exchange control

Scarcely had the world-wide efforts towards currency rehabilitation resulted in a general stabilization of the exchanges when a new factor was to change the whole picture. The new factor was *Great Britain's abandonment of the gold standard in September 1931.*

The decision of the British monetary authorities was apparently occasioned by an incidental occurrence. As a result of the moratorium granted to Germany by President Hoover, that country was released from her obligation to transfer the amounts of the credits due for repayment to foreign countries (the so-called 'frozen' credits). Great Britain thus found herself with a claim on Germany which had now ceased to be liquid, at a moment when large sums of money were being withdrawn from London by foreign depositors. This circumstance depressed the sterling market, and although France and the United States had placed large credits at Britain's disposal, the British authorities considered that they could not effectually support the rate of the pound at a level corresponding to the metallic par, and asked that the Bank of England be released from its obligation to convert its notes into gold – which was immediately done (Gold Standard Amendment Act, September 21st, 1931).

So the gold standard had now been abandoned. But the sterling rate, after declining at first, was not long in rising. The British monetary authorities then intervened on the exchange market *to prevent the pound rising to par* by buying up the surplus foreign exchange offered. In this way *a fund* was gradually *constituted* by means of which the exchange market could, conversely, be provided with foreign exchange when demand was in excess of supply. The existence of this fund was not disclosed until later; it was known as the Exchange Equalization Fund.

Two separate operations had consequently been carried out, the *first* being the *devaluation, a deliberate devaluation,* of sterling. The stabilization of 1925 had been effected on the basis of the old parity rate, while prices were still about 50 per cent higher than 1914 prices. Most of the countries which had stabilized their currencies on the basis of new parities had taken account of the rise in internal prices when fixing the parity, and the exchange loss so consolidated compensated the rise in prices where the foreign buyer was concerned. Great Britain was therefore badly placed to meet international competition, and her exports suffered in consequence. So the British authorities seized the opportunity provided by a shortlived incident to repair the error made in 1925.

The second operation was the constitution of an organization responsible for regulating the exchange, either by buying surplus foreign exchange or by supplying the additional amount required. This organization functioned in the same way as the other organizations on the same lines – foreign exchange offices, banking offices, etc. – previously described, *except that it was not compelled to buy and sell drafts on foreign countries at a fixed rate.* It did not ensure rigid stability but *control of the exchanges,* and the monetary authorities retained their right to alter the conversion rate: it was the inauguration of a system of managed currency.

Eighteen months later – in April 1933 – the President of the United States adopted the same policy, except that the idea was not so much to stimulate exports by adopting a new exchange parity as to relieve the farmers of their burden of debt by reducing the purchasing power of the dollar. *After allowing the dollar to fall until it had lost about 40 per cent of its value, however, he restored it to what was, in fact, a stable parity with gold.* He was authorized by a law passed on January 31st, 1934, to fix the gold weight of the dollar within a limit ranging from a maximum of 60 per cent to a minimum of 50 per cent of its former parity.

Most of the currencies of the world were pegged either to the pound or the dollar, chiefly the pound. Most of the small European countries – Scandinavia, Portugal, Greece, etc. – and many others besides – Egypt, etc. – *had large sterling accounts in London.* These countries thought it advisable to *maintain the existing parity between their currencies and the pound* – which, owing to the existence of the accounts, was easily done.[1] The countries whose currency was pegged to the dollar did the same.

The British authorities, on the other hand, decided when President Roosevelt devalued the dollar *to allow the pound to fall concomitantly.* The pound was thus prevented from becoming a *dearer* currency than the dollar; the effect of President Roosevelt's action was *neutralized* where British exports were concerned, and though the two currencies

[1] In practice such accounts act like conversion funds.

became more and more unstable relatively to gold, they remained *stable in relation to one another.*

In this way a sterling bloc and a dollar bloc, firmly welded one to another, came into being.

Meanwhile, the Bank of France, which had for a long time desisted from stabilizing the franc, was no longer wishful of abandoning the stability in relation to gold for which provision had been made in the law of 1928. Belgium, Holland, and Switzerland were of the same way of thinking. Their view had long been shared by Poland and Italy. The result was the formation of a *gold bloc* of modest dimensions, which gave its adherents the now somewhat illusory satisfaction of keeping their currencies stable *relatively to gold* in return for the much greater disadvantage of making them *unstable in relation to most of the foreign currencies* – or, to put it more concretely, of possessing *appreciated* or *dear* currencies.

An attempt was made in France to counteract the dearness of the franc by a so-called deflationary policy, which implied keeping costs, especially wages, low; and which, incidentally, led to social disturbances. And when this deflationary policy made way, in 1936, for a policy of increased purchasing power, i.e. a rise in wages and agricultural products, it was obviously no longer possible to maintain the stability of the franc in relation to the pound.

Under a law passed on *October 1st, 1936*, the convertibility of the franc was suspended and an exchange stabilization fund was created on the lines of that established by Great Britain – with the exception that before it could be started it had to be provided with gold, as the balance of payments was adverse, and instead of foreign exchange having to be bought, means of payment to foreign countries had to be offered. From now on the franc was to contain not less than 43 milligrammes and not more than 49 milligrammes of gold (as against 65·5 in 1928) and to be nine-tenths fine. It was an 'elastic' gold franc, which made it possible, whilst effecting a systematic devaluation, to allow the franc to fluctuate within certain limits at the desire of the competent authorities.

The last supporters of the gold bloc were compelled to follow France's example.

But in *1937* a decree of June 30th severed the last remaining link with gold. The elastic franc was succeeded by a *floating* franc, *which was the prelude to further devaluation*; the original devaluation being still insufficient to offset both the depreciation of foreign currencies and the fresh rise of prices in France. The franc was therefore allowed to fluctuate in a downward direction. In 1938, however, *an official devaluation limit was fixed*, of *179 francs* to the pound (May 5th, 1938). On November 12th of the same year, with a view to the revaluation of the cash reserve of the Bank of France, whereby the latter obtained, as in 1928, repayment of part of its advances, the value of the franc was fixed at *27·5 milligrammes* and its standard fineness at 900/1,000. A similar operation for the same purpose, which was put into effect by the agreement concluded with the Bank of France on February 29th, 1940, further reduced the gold content of the franc to *23·34* milligrammes. The official parities with the pound and the dollar were, moreover, maintained at fr.176·62½ and fr.43·80 respectively from that date until December 1944, when they were increased to fr.199·78 and fr.49·53, or, in round figures, 200 francs and 50 francs. These parities, which overvalued the French franc relatively to the pound and the dollar having regard to the respective purchasing power of the currencies, could not be other than temporary. They were increased in 1946 to 480 francs to the pound and 119 francs to the dollar, and on January 26th, 1948, to 864 francs to the pound and 214 francs to the dollar.

To sum up: Great Britain, the United States, and most of the European countries *abandoned the gold standard whilst retaining control of the exchanges*, as a result of the creation of regulating organizations – exchange equalization funds – which ensured the flexible convertibility of the domestic currencies into foreign currencies not at a fixed parity, but at a parity which was at least reasonably stable.

Germany, who had practically no gold reserve or external credits, managed to achieve somewhat similar results by adopting a system of *exchange control*. In principle, the rate of the mark was kept stable in relation to gold. And this stability was secured by the machinery described above (p. 107). But, in fact, different categories of marks, bought and sold on differing terms, were created for various transactions – such as blocked marks used for the sale of property or securities for foreign account.

Many *Central European* and *South American* countries whose external credits were insufficient to support the free exchange market likewise set up systems of exchange control of a more or less rigid kind.

Hence, *by about 1940*, international monetary relations had ceased to be governed by rigid parities such as those which had so long been operative under bimetallism and more recently, though for a shorter period, under the generalized gold-standard system. But the exchanges *had not relapsed into the state of instability which had for so long characterized the paper-currency system*. The exchange of each nation was kept in check through a regulating organization which controlled the free exchange markets (equalization funds) or took over their functions; and after the large-scale devaluation of the pound and the dollar it was once more possible to effect international payments on a relatively stable basis.

§6. The Bretton Woods Agreements and the International Monetary Fund[1]

During the second world war a trend of opinion began to take shape, notably in America and Great Britain, in favour of putting an end to monetary manipulation and preventing the new period of hostilities being followed, as the last one had been, by general disequilibrium of the exchanges.

After the 1914-1918 war the currencies of nearly all the belligerents had suffered more or less pronounced depreciation, and it had taken them some years to stabilize their exchanges. The stabilization had consisted, except in Great Britain, in a return to convertibility on the basis of new parities. For as internal prices had risen, all the countries were obliged, if their exports were not to be brought to a standstill, to compensate the rise by lowering their domestic currency in relation to foreign currencies. And as time went on this truth gradually became apparent to the responsible authorities.

Thus in France the Government, which had long clung to the illusion that the franc would rise, and that a day would come when it would only be necessary to do away with the forced currency to restore the gold standard, made up its mind to stabilize the franc, i.e. to secure its external convertibility at a new parity. By that time prices had risen fivefold: a new franc was adopted, with a gold content equal to about a fifth of what it had been under the law of the year XI, so cancelling out the rise in prices. Or at least it seemed on the face of it to do so. But no allowance had been made for the fact that prices had also risen, though in much smaller proportions, in Great Britain, America, and the neutral countries. There was therefore no necessity to reduce the franc to a fifth of its former value to establish a rate of exchange corresponding to the purchasing power parities; a reduction on this scale overcompensated the rise of internal prices and acted as a sort of premium on exports, which greatly stimulated French production in the years which followed.

In many countries the effect of the new parities was a similar one, whilst the neutrals, who had kept to the old parity, and Great Britain, who had unwisely returned to it in 1925, found their exports handicapped in varying degrees. *It then became clearly evident that manipulation of exchange rates was a potent instrument of trade policy.* Japan made systematic use of it as a dumping process which materially furthered her export policy. As we have already seen, President Roosevelt had also decided in 1933, though for different reasons, to devalue the dollar. But as it is impossible, by definition, to depreciate a currency relatively to gold without causing a corresponding appreciation of currencies which have kept their par value, it became more and more obvious that when a great state made use of its sovereign rights to alter its currency, it was not merely taking an internal measure, but encroaching, as it were, on the sovereignty of other states.

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[1] See G. LAJUGIE, *Plans et Accords monétaires internationaux* (Rev. Gen. de Droit Intern. Public, 1944-5).

It is an interesting fact that it was in America, ten years later, that there was the most definite swing of opinion in favour of abandoning monetary policy as an instrument of trade policy and of taking decisions relating to exchange parities out of the hands of the national authorities and entrusting them, at least in part, to an international authority.

It should be added, moreover, that there was a strong feeling, particularly in Great Britain and America, that the contraction of the international exchanges was due largely to the system of exchange control which had been set up with greater or lesser rigidity in a large number of countries. This régime does, in fact, as we have seen, tend to secure exchange stability by equalizing as closely as possible incomings and outgoings of the balance of payments – which means restricting imports so that their value shall be compensated by that of claims outstanding on foreign countries. It was consequently felt in America that if international exchanges were to be expanded to their former volume, all exchange restrictions ought to be removed as soon as possible; it was in this way that the idea arose of creating an international organization to facilitate monetary settlements between all the different countries.

In April 1943 two plans for international monetary reorganization, one English and the other American, both drawn up by official experts, came into being: the Keynes Plan and the White Plan.

The first, which was the work of a daring theorist, went straight to the rational solution. As world gold stocks were inadequate and too unequally distributed to serve as a regulating balance-wheel, all the nations were to be got to agree to *open reciprocal credits* for one another through an international organization, with the object of averting any protracted disequilibrium of the international exchanges. Briefly, when a country had sold much more than it had bought abroad, it was to agree *to be paid*, as in internal exchanges, *by a corresponding amount being entered to the credit of its account with a banking institution.*[1]

The White Plan, which was drawn up on the initiative of Mr. Morgenthau, the Secretary of the American Treasury, was on the contrary a purely empirical project, its aim being simply the constitution of *an*

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[1] The author of this book, replying to an inquiry instituted by the Marseilles Chamber of Commerce, and having at that time by reason of his isolation no knowledge of the Keynes Plan, drafted a project the principles of which were practically identical with those of the Keynes Plan. (See the Review of the Marseilles Chamber of Commerce for April 1944.) The substance of this project will be found here in Chapter III, Part II, at the end of the paragraph dealing with the theory of exchange.

international stabilization fund holding a limited stock of foreign exchange and directed, in fact, by the most powerful economic nations, chiefly by the United States.

On July 1st, 1944, a conference opened at *Bretton Woods*, in the United States, at which forty-four states were represented; it terminated in the *Bretton Woods Agreements* – July 22nd – which inaugurated an *International Monetary Fund* and an *International Bank for Reconstruction and Economic Development.*

The *International Monetary Fund* is under the supreme direction of a *Board of Governors*, which consists of representatives of the various states. But it is administered by a permanent body of Executive Directors, not less than twelve in number, five of whom represent the five great powers, the others being elected by the other states.

The Fund's resources, according to the initial subscriptions, amount to \$8·8 milliards. They are constituted by payments which must in principle be made at least as to 25 per cent in gold. The payments may, however, be limited to 10 per cent of the holdings of the member country in gold or United States dollars. The remainder is paid in the national currency, or, to be more precise, in obligations representing the currency, payable on demand, non-interest-bearing and non-negotiable.

Each country is assigned a quota,[1] the base of which proved somewhat difficult to define, but its size determines both the share which it takes in the administration of the Fund and the amount of the credits which it is able to obtain.[2]

The International Monetary Fund having thus been provided with resources enabling it to assist in the stabilization of the exchanges, the next question which arose concerned the basis on which stability was to be secured. The first step consisted in the fixing of a common monetary unit, in relation to which the parities of the other currencies were to be calculated. *The monetary unit chosen was the United States dollar as it existed on July 1st, 1944, i.e. 0·89 grammes of fine gold.* It was decided, on the other hand, that the foreign exchange parity of each country should, in principle, be that which had been operative *sixty days before the entry into force of the Agreement.* Thus, each member was free, subject to consultation with the international monetary authority, to fix the initial par value of its currency relatively to the dollar of the international Fund. But it can only change the par value unilaterally on its own authority up to a limit of 10 per cent. Changes in excess of this limit require the concurrence of the International Monetary Fund.[1] And the latter is, in principle, only to agree to any major change of the par value if this is justified by the necessity to correct 'fundamental disequilibrium'.[2]

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[1] In the beginning the highest quotas were the following (in millions of dollars): United States, 2,750; United Kingdom, 1,300; Russia, 1,200; China, 550; France, 450. But in 1946 France got her quota raised to 525 million dollars. *Final Act*, Section 3, §(a) iii.

[2] 'A member shall be entitled to buy the currency of another member from the Fund in exchange for its own currency, subject to the following conditions . . .

> (iii) The proposed purchase would not cause the Fund's holdings of the purchasing member's currency to increase by more than twenty-five per cent of its quota during the period of twelve months ending on the date of the purchase, nor to exceed two hundred per cent of its quota. . . .'

It was also provided that the International Monetary Fund could change the price of gold by either raising or lowering the value of the base currency – the dollar as defined above.

Briefly, the establishment of the International Monetary Fund was based in the first place on the principle that *the member countries should renounce their full sovereignty with regard to the fixing of the par value of their currency*, which was only to be subjected to any major alteration in exceptional circumstances.

The international authority which controls the fixing of the monetary parities between the member countries is, on the other hand, *responsible for assisting them to maintain them.*

For this purpose it has at its disposal the resources paid into the Fund by the member countries; *the Fund is essentially a stabilization fund* whose duty it is to intervene when called upon to do so by any of its members when the resources of the national banking institutions or stabilization funds are inadequate. But it must be realized that *the resources of the International Monetary Fund are themselves very small, and that the member countries can only have recourse to them to a very limited extent.* As a general rule, each state can only apply to the Fund with a view to purchasing the foreign exchange which it requires for an amount equivalent, for a period of twelve months, to 25 per cent of its quota, and, for an unspecified period, to its full quota. It is also provided that each member is to be induced to reconstitute its quota in proportion as its own monetary reserves are reconstituted, by repurchasing, either for gold or for currencies at par with gold, the holdings of its own currency which it had previously paid in in order to obtain foreign exchange (see *Final Act of the Bretton Woods Agreement*, Section 7, §b, iii).

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[1] If, however, the change does not exceed 20 per cent, any objection on the part of the Fund must, in order to be valid, be declared within three days.

[2] It is stipulated, however, that the Fund shall not object to a change of the par value if the change is the result of the social or general policy of the member proposing the change.

In January 1948 France not only lowered the official value of her currency – 864 francs to the pound, 214 francs to the dollar – but, despite the Fund's dissent, established a free franc market side by side with the official market. The latter was to receive 50 per cent of the exporters' foreign exchange, to be used to pay for priority imports at the official rate.

Thus, the constitution of the International Monetary Fund which emerged from the Bretton Woods Agreements is not of such a kind as to guarantee general stability of the exchanges, even in normal times. As each member must first utilize its own exchange reserves, the Fund only intervenes for the purpose of supplementing them in order to ward off *temporary disequilibrium* of the balance of payments.[1] It cannot, *a fortiori*, undertake the task of ensuring international payments at stable parities in periods when the balances of payments of the majority of countries are seriously upset. It is for this reason that its creation was accompanied by that of a banking organization to finance reconstruction. And even so, the equilibrium of international payments has only been maintained up to the present, even in countries such as Great Britain and France, by the opening of credits which have temporarily compensated the deficits on their balances of payments. And whilst it is true that in 1947 the stability of the exchanges was preserved in most countries, it must be recognized that this was due in the main to empirical measures whereby a precarious position was maintained with some difficulty.

§7. Hungary's monetary experiment

The disequilibrium of the nations' balances of payments was no less serious after the second world war than it had been after the first one. But thanks to the credits granted them, most of the countries which participated in the war have succeeded up to the time when these words are written in keeping their exchanges under control. Internal currency depreciation, on the other hand, did not reach catastrophic proportions except in a few countries of Eastern Europe – Greece, Rumania, Poland, and Hungary.

Hungary, however, presents us with a case of extreme depreciation, which far outstripped the collapse of the mark in 1923. When the fall of the mark was finally checked the paper mark was converted into a new mark equal to the old one at a rate of 1,000 milliards, or, in other words, a trillion[2] depreciated marks to one gold mark. Now, when on August 1st, 1946, the pengoe was replaced, after a year of monetary crisis, by the forint (florin), it was at a rate of 400 octillions[3] to a florin; and as the pengoe of 1938 was worth, in gold, 2·07 florins, its depreciation was defined by a ratio of 828 octillions[4] of depreciated pengoes to 1 prewar pengoe.

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[1] The first Annual Report of the Executive Directors stresses this point. See *International Monetary Fund: First Annual Meeting of the Board of Governors*, Washington, D.C., November 1944; also *International Monetary Fund, Annual Report of the Executive Directors for the Fiscal Year ending June 30th, 1947*, Washington, D.C.

[2] A billion according to the British and Central European reckoning.

[3] Quintillions, according to the British and Central European reckoning.

[4] Or even 920 octillions, if we take the definitions obtained by reference to the dollar quotation.

The following is, briefly, the history of the extraordinary adventure which befell the Hungarian currency.

In 1927 Hungary had adopted a new monetary unit, the *pengoe*, which contained 263·16 milligrammes of fine gold. In 1933, when its rate had declined on the international market, a new parity relatively to the dollar was adopted, which established a premium of 50 per cent in favour of the latter, making 5·14 pengoes to the dollar.

Hungary's monetary situation had been affected very early on, like that of many European countries, by preparations for the war, before it was affected by the war itself. The carrying through of the armaments programme decided on in 1937 led to a considerable increase of *the public debt, which rose from 1,657 millions to 15 milliards between 1939 and the end of 1944*, *and in the volume of the notes issued, which rose from 831 millions to 10,700 million pengoes during the same period.*

It should be noted that this increase of monetary tokens coincided with a substantial reduction of Hungary's available resources in the way of agricultural produce – particularly cattle – and industrial material as a result of the heavy deliveries made to Germany during the war.[1]

At the beginning of 1945, when the Russian armies arrived in Hungary, there was a period of about four months when *issues of money ceased almost entirely.* The Hungarian Nazis had carried away the National Bank's printing presses. The Russian army, moreover, only put a small quantity of money into circulation for its own requirements.

But all wartime restrictions had been removed, and all administrative control had ceased, whereas goods were still in very short supply. Accordingly, during this period *the cost of living rose to fifteen times its former level.*

It was only from *April 29th, 1945*, that the Hungarian Government again began to put notes into circulation. The improvement in supplies was, moreover, sufficient to more than counteract the effect of the new issues.[2]

But at the beginning of the autumn of 1945 the pace of the depreciation took on fresh momentum, and towards the end of the year Hungary found herself embarked on a course of monetary depreciation *without precedent in history.*

Figures illustrating the extent of the great Hungarian monetary crisis are contained in the table reproduced overleaf.[3]

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[1] See the *Revue de la Situation économique à l'Etranger* published by the French Ministry of National Economy, January 1936, p. 77.

[2] See the articles by NICHOLAS KALDOR in the *Manchester Guardian Weekly Edition*, December 7th and 13th, 1946.

[3] Taken from the first article published by PROFESSOR VARGA in the *Neue Zürcher Zeitung* (January 7th, 1947) and reproduced in various documents. The terms billion, trillion, etc., should be read in the sense in which they are used in Great Britain and Central Europe.

Average daily rise in prices		Price index August 26th, 1939 =1	Dollar quotation on black market
July 1945	1	105	1,320
August 1945	2	171	1,510
September 1945	4	379	5,400
October 1945	18	2,431	23,500
November 1945	15	12,979	108,000
December 1945	6	41,478	290,000
January 1946	2	72,330	795,000
February 1946	18	435,887	2,850,000
March 1946	11	1,872,913	17,750,000
April 1946	60	35,790,361	232,000,000
May 1946	1,012	11,267 mill.	59,000 mill.
1st half of June 1946	504	862,317 „	7,600,000 „
2nd half of June 1946	8,504	954 bill.	42,000 bill.
1st week of July 1946	45,904	3,066,254 „	22,000,000 „
2nd week of July 1946	53,214	11,426 trill.	481,500 trill.
3rd week of July 1946	45,014	36,018,959 „	5,800,000 „
4th week of July 1946	158,486	399,623 quadr.	4,600,000 quadr.

As for the total of the notes issued by the Hungarian National Bank, its progression will be seen from the following table:

	(in millions of pengoes)
December 31st, 1945	765,000
January 31st, 1946	1,646,000
February 28th, 1946	5,238,000
March 31st, 1946	34,002,000
April 30th, 1946	434,304,000
May 31st, 1946	65,589,000,000
June 30th, 1946	6,277,000,000,000,000
July 31st, 1946	17,300,000,000,000,000,000[1]

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[1] From *Etudes et Conjuncture,* World Economy, December 1946-January 1947, p. 91.

This is obviously a classic instance of inflation: a multiplication of the money tokens completely unrelated to the progress of production, its primary object being to avert a deficit on the budget, consecutive rises of prices increasing state expenditure more rapidly than revenue, consequently calling for further note issues, all the larger because the purchasing power of each monetary unit was becoming smaller, etc. etc.

This traditional description must be supplemented, however, by certain additional facts. *At the time when the great depreciation of the pengoe began, in the autumn of 1945,* the Hungarian Government was faced with reparations, and for this purpose large credits had to be made to industry. At the same moment. moreover, the trade unions succeeded in getting a *sliding wage scale* put through 'to bring their money wages up to a perceptible fraction of prewar wages'.[1] The rise of prices thus engendered a rise – though a much smaller one – in wages, which again engendered a rise of prices, the two factors reacting on each other indefinitely.

Here, except for the details, is obviously *the classic pattern of internal currency depreciation,* though we cannot find any exact explanation of the rapidity with which the inflationary process developed.

It should be observed that *the internal depreciation was accompanied by a depreciation of the pengoe relatively to foreign currencies,* represented principally by the United States dollar. *The dollar, moreover, did not figure only as a a foreign currency.* It *appeared in the form of notes inside Hungary*; it was sought after, like gold, as money which kept its purchasing power. Its rate on the free market appears to have been primarily the expression of an *internal agio* which reacted on prices, for cost prices were established in dollars in industry.

The dollar does not seem to have circulated in very large quantities; *it finished, however, by becoming what was, in fact, an important element of Hungary's stock of money*; for at the time of the monetary recovery, the Hungarian National Bank had collected an amount of *12 million dollars* in foreign exchange – chiefly in United States notes – and gold, whereas the overall value of the pengoe notes withdrawn from circulation only amounted to 14 million florins.

But the most original feature of the Hungarian monetary crisis consisted in *the appearance of a new monetary medium: the fiscal pengoe.*

The fiscal pengoe first emerged as a financial expedient. In every country where there is pronounced currency depreciation the sums of money representing fiscal revenue lose a large part of their purchasing power between the time the tax is imposed and the time its proceeds are collected, and still more before they are spent. It was decided, therefore, that from January 1st, 1946, taxpayers were to pay the amount of the tax shown on the demand, multiplied by a coefficient based on the daily price index. To enable this to be done a *money of account* was created, the *fiscal pengoe*, the rate of which, established according to the price index and expressed in terms of ordinary pengoes, was published every day. And it was in this money of account that the amounts due by taxpayers were fixed. On January 10th the banks and savings banks also opened *accounts in fiscal pengoes.* The value of the sums deposited was adjusted automatically; when a depositor withdrew his money he received, in ordinary pengoes, the amount deposited multiplied by a coefficient corresponding to the ratio of the rate of the fiscal pengoe on the date of withdrawal to its rate on the day of deposit.[1]

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[1] N. KALDOR, in the above-mentioned article.

Later – on June 1st, 1946 – *notes in fiscal pengoes were put into circulation, and wages and prices were thereafter fixed in fiscal pengoes. The fiscal pengoe, which had at first been only an accumulator of value, became also a medium of exchange and a monetary standard.*

The table given below shows[2] the *comparative evolution* of the fiscal pengoe and the ordinary pengoe from January 1st, 1946 – the date of the institution of the fiscal pengoe – to the end of the two currencies (July 31st, 1946).

Average daily percentage of price increases compared with fiscal pengo		Prices in fiscal pengoes. January 1st, 1946=1	Index of dollar quotations on black market in fiscal pengoes
January 2nd, 1946	—	1·0	1·0
April 18th	—	1·0	1·5
April 19th-May 31st	2·8	2·4	1·9
June 1st-19th	6·9	4·8	5·9
June 20th-July 8th	19·9	22·8	21·9
July 9th-15th	43·5	101·0	116·0
July 16th-23rd	95·8	875·0	981·5
July 24th-27th	358·5	15,454·9	37,037·1
July 28th-31st	5·4	10,551·0	8,518·5

During an initial period lasting nearly four months the internal value of the fiscal pengoe remained stable. In other words, prices expressed in fiscal pengoes did not rise. This was quite logical, since the value of all sums of money in fiscal pengoes was automatically regulated by the price index.

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[1] See the Finance Ministry's *Bulletin de Législation comparée*, 4th quarter 1946, p. 680 *et seq.*

[2] Taken from PROFESSOR VARGA's first article.

It should be noted, however, that at the end of this first period the fiscal pengoe began to depreciate slightly *in relation to the dollar.*

Between April 19th and June 18th there was a second period, in the course of which the fiscal pengoe also began to depreciate internally.

After June 19th, in the third phase, the depreciation became pronounced.

In its last phase it became still more acute between July 16th and 23rd, grew to enormous proportions between the 24th and the 27th, and finally abated between the 28th and the 31st.

The conclusion would appear at first sight to be that the fiscal pengoe ended up by depreciating in the same way as the ordinary pengoe, and it has even been considered that, far from checking the depreciation of the latter, it precipitated it.

It behoves us, however, to look into the matter more closely.

Where the depreciation of the fiscal pengoe is concerned, we must begin by mentioning certain facts which throw light on its history. We have noted two important dates: April 19th and June 19th, 1946.

It was, in fact, on *April 19th* that the fiscal pengoe began to depreciate internally. Now, according to competent witnesses this date coincides with that of the decision taken by the Hungarian Government to cease to apply a coefficient of *revaluation* corresponding to the whole of the effective rise of prices: which meant that its purchasing power ceased to be constant. It should be observed, moreover, that the price index was established every day on a basis of the prices registered the day before; and in a period of extremely rapid depreciation this is sufficient to prevent the co-efficient representing the increase in the value of the money from compensating fully for the rise in prices. Finally, it should be noted that the fiscal pengoe did not possess the advantage of any regular convertibility into gold or into any currency at par with gold, that it began by suffering an exchange loss, and that the latter was bound to react on its internal value.

As for the date of June 19th, 1946, this coincided with the beginning of the period when the ordinary pengoes were practically wiped out by the fiscal pengoes, and when it was found necessary to multiply the issues of the latter.[1] It is worthy of note, too, that up to the beginning of July the depreciation of the fiscal pengoe had been infinitesimal compared with the ordinary pengoe, and that it took until the week before the new currency made its appearance for it to grow to catastrophic proportions.

The enormous depreciation which occurred between July 24th and

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[1] As regards the theoretical problem, see Part III, Chap. III, §4.

29th, which was, moreover, followed by an improvement in the three following days, would thus appear to have been an accidental phenomenon due to uncertainty about the rate at which the fiscal pengoe was to be converted into the new currency. Consequently, this last phase of all does not give us any grounds for assimilating the depreciation of the fiscal pengoe to that of the ordinary pengoe. And then again we must bear in mind that the conversion of the fiscal pengoe was effected, on August 1st, 1946, at a rate of 200 millions to a florin, whereas the conversion rate of the ordinary pengoe was 400 octillions to a florin.

The last feature which characterizes Hungary's curious currency experiment was the method employed to rehabilitate it, which was carried out on April 1st, 1946.

This was preceded by a realignment of prices and wages, conducted on highly original lines.

Prewar prices and wages were taken as the base. But as the national income was assessed at only 60 per cent of what it had been in 1938, and as, on the other hand, it was necessary to take account of reparations and reconstruction, it was decided to apply an average percentage of 50 per cent. It was consequently thought that wages calculated in prewar pengoes might rise to 55 per cent of their prewar level when production per head at the factories rose to 75 per cent. A rate of between 40 and 42 per cent was adopted for salaries. The percentage for rents was fixed at 60 per cent for the lower ones and 40 per cent for the higher ones.

The next step was to fix prices, and no hesitation was felt about making radical changes in the pre-existing price system. First the price of wheat was fixed, at 2·2 times the prewar pengoe price. The average was 2·7 for agricultural prices as a whole and 4·4 for industrial prices.

The intention[1] in making so drastic an alteration in the relation between industrial prices and agricultural prices was to bring the purchasing power of the country districts into line with what the towns had to offer in the way of industrial products. It was thought, moreover, that the prices of the latter could be progressively reduced when production increased, and that it would tend to strengthen confidence in the currency if prices were lowered.

This price system was established before it was known what the conversion rate of the pengoe into the new monetary unit or the parity of the latter with gold or with the dollar were to be. It was not until the night before the stabilization was carried out that the announcement was made. Prices in florins had on an average trebled relatively to pengoe prices for 1938, and incomes – wages, etc. – already fixed in old pengoes were translated into florins at a ratio of 3 to 1.

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[1] KALDOR, in the article already referred to.

The fundamental idea behind the reform was obviously to prevent the total of incomes exceeding the total value of production calculated on the cost prices previously established.[1] Inflation, indeed, does not result only from the creation of money for account of the State, that is to say, the accruing to the State of fictitious purchasing power which is added to that of private persons: in a managed economy it can equally well be the result of a rise of prices or wages decreed, sanctioned or tolerated by the public authority *which entails the putting into circulation of a corresponding volume of bank money and fiduciary money,*[2] *and which increases the total of money incomes without a correlative increase of production.*

The official documents which have been made public also testify to the desire to achieve and maintain a balanced budget once the monetary reform had been put through. No mention is made, however, of measures designed to ensure the regular convertibility of the new florin into dollars and to maintain a stable exchange. *Nevertheless, it would be a serious misinterpretation of the facts to regard the rehabilitation of the Hungarian currency, as do certain commentators, as an operation of a strictly internal character.* However timely and effectual the precautions taken to ward off internal currency depreciation may be, *they in no way obviate the necessity for measures being taken to secure the stability of the currency in relation to gold or to foreign currencies which themselves possess stable parities with gold and with one another; now in this case the measure to be taken necessarily consists in the establishment of a convertibility device,* however unobtrusive it may be. Indeed, if the fluctuations in the rate of exchange are to be contained within the narrow limits which ensure its stability at around a fixed parity, it is necessary to have a rate which is quite close to this parity, at which the surplus drafts on foreign countries on the market can be purchased, and at which the means of payment – in gold or foreign exchange – which are necessary, in the event of an adverse balance of payments, to avert any shortage in the supply of drafts on foreign countries, can be supplied. And though in Hungary's case the official documents make no mention of a convertibility device, it is noteworthy that at the time of the Hungarian monetary reform the National Bank held 32 million dollars of repatriated gold, supplemented by 12 million dollars in notes, bills or securities, which brought its cash reserve up to a total of $44 million. This was more than 517 million florins, whereas the ceiling of the authorized note issue was a milliard florins. And whilst it is true that the interest attaching to the operation did not lie essentially in the amount of the 'backing' (more than 51 per cent), the constitution of this gold reserve was none the less of major importance from the standpoint of the stabilization of the exchange. For it did, in fact, constitute the essential element of a convertibility device.

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[1] At first glance, it might be objected that the total of incomes and the total value of production – if we take the latter in its wider sense, denoting any participation in economic activity – are necessary equal. For the value of production, which is equal to the aggregate turnover, includes the remuneration of everyone who has taken part in production. But the people who offer their services to the heads of enterprises, particularly wage-earners, receive their pay before the products are sold. Consequently, if there is a sudden rise in the earnings of the productive workers, or even in wages alone, the total of incomes may rise to more than the value of production calculated on the wages previously paid, for the products which are to be sold. It is this which has to be avoided if the beneficiaries of the increased incomes are not to have to pay more for the products on sale, or, in other words, to send up prices.

[2] Regarding the machinery whereby this money is created, see Part I, Chap. I, §5, concluding lines.

CHAPTER IV

COLONIAL CURRENCIES

§1. The problem of metallic money in the French colonies under the *ancien régime*

In this short chapter on colonial money we shall not concern ourselves except very fleetingly with the money used by the native colonial populations. It will be sufficient for our purpose if we select a few outstanding examples illustrative of the principal monetary problems created by the fact of colonization and by the relations between a mother country and her colonies.

Canada under the *ancien régime* presents a curious field of exploration from this point of view. The problem was first to provide the colony with money and then to enable her to keep it. Various expedients were resorted to with this object. In the beginning certain goods in current use and which could be kept fairly easily were employed as money of account and payment. Thus in 1669 the Supreme Council of the colony allowed debtors to discharge their debts in corn at four livres to a peck, and on various occasions beaver skins were appointed to be used as a means of exchange. Their direct use was subsequently forbidden, but the receipts of the warehouses where they were deposited were accepted as money.

Attempts were also being made, however, to give the colony a metallic currency. On February 19th, 1670, the West India Company was authorized by Letters Patent to mint silver and copper coins for an amount of 100,000 livres. The Company issued 15-sol pieces and 2-denier pieces, of the same weight and fineness as those circulating in France, but with a different impress. It was very soon decided that the coins circulating in the colony should have a higher value there than in France. So the value of the 15-sol pieces was to be 20 sols, and the value of the other coins was 'increased' in the same proportion.

These measures are not surprising to anyone who is acquainted with the habits of the *ancien régime* where monetary matters were concerned, since the prices of real money were fixed by changeable official tariffs expressed in money of account. The decree of the State Council of November 18th, 1672, which gave the measures effect, explained the reason for the increase in value. It was intended in the first place to render the colonial metallic money inexportable by the substantial depreciation which any attempt to tender it as payment in France would entail. It was also desired to further local trade and the export of local goods by ensuring that the internal colonial price for a given quantity of metal should be kept lower than the corresponding price in the mother country.

All things considered, we should say in modern language that the colonial money was systematically devalued in relation to that of the parent state, since a given quantity of money represented a larger number of monetary units in the colony than in France. But the effectiveness of this measure was dependent on various contingencies, and it would not appear to have been great. In any case, it was not long before it was repealed: under an order issued on September 10th, 1694, it was enacted that the official prices of the French and foreign coin circulating in the colonies were to be brought into line with those ruling in France.[1]

§2. Fiduciary money in the French colonies under the *ancien régime*

Because of the inadequacy of the supplies of metallic money in most of the French colonies, the local administrations were compelled to resort to fiduciary money at a time when its use in Europe was still extremely restricted. It was this reason which was responsible for the issuing of notes in the British colonies in America at the beginning of the eighteenth century. In the French colonies orders to pay, notes or vouchers handed by the governors or intendants to their creditors were put into circulation and served as temporary media of exchange pending their payment in cash.

But the most curious instance of the creation of fiduciary money was that of 'card money', which was first issued by the intendant Jacques de Meulle, in Canada, in 1685. They were playing-cards cut into four pieces, with the French coat of arms stamped on them with a wax seal. They were originally of three kinds, for 4 francs, 40 sols, and 15 sols, representing a soldier's pay for a month. Jacques de Meulle made these curious notes legal tender, backed by his personal undertaking to repay them in cash, and for a long time this undertaking was duly carried out by himself and his successors. The local authority covered itself by drawing drafts on the Treasury.

Card money was apparently accepted without demur, but it depreciated to some extent. In 1691 Jacques de Meulle's successor wrote: 'The troops have to pay much more in card money than they would have to in cash.'

After the initial experiment the card money, which had lost five-eighths of its value, was withdrawn in 1720. But as metal money had disappeared, it was issued again in 1729. During the Seven Years' War, however, the drafts on the Treasury were no longer paid, and card money fell into disfavour. It finally disappeared in 1764 after an experiment lasting eighty years.

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[1] See ZAY, *Histoire monétaire des Colonies françaises.*

Card money had not been confined to Canada. It had also been issued in Louisiana and French Guiana, and paper money circulated under various names and forms – notably cash notes and shop notes – in the Antilles and the islands of the Indian Ocean.

The card-money experiment was a singularly curious one, inasmuch as the *fiduciary money was convertible into bills of exchange on the mother country*, and its rate apparently depended mainly on the regularity of its conversion. It was therefore not so much a fiduciary currency which could be converted into cash at a later date, as a local currency *convertible* – if all went well – *into an external currency*. So we can regard the expedient of card money as an anticipation of the modern systems which are akin to the gold exchange standard.

§3. The problem of monetary relations between colonies and mother country

Regarded from the economic point of view, every colony is an individual unit, and its monetary system may be entirely different from that of the mother country. Thus, India, like Indo-China, had her own currency. But even when a colony uses the *same monetary unit* as the mother country, this does not necessarily mean that the method of effecting monetary settlements differs from that adopted between two foreign countries, or even that the exchange between the colony and the mother country is stable. Thus, although the French method of monetary valuation was introduced into the Antilles in 1826, the exchange between these islands and France was long a fluctuating one.

What had happened was that an attempt had been made to keep the Antilles provided with an adequate supply of money by putting into circulation *cash bonds* – originally in the form of notes and afterwards in the shape of metal counters – which were fully backed, but *inconvertible*. The *local franc* consequently became an *entirely different currency from the French franc*, and in the absence of any regular convertibility between the two currencies, its exchange rate inevitably became unstable.[1]

The mother country is naturally anxious, however, to establish a stable exchange with her colonial possessions, and sometimes comes to their aid with assistance which they could not look for from other quarters.

In this respect the evolution of the monetary relations between France and the countries belonging to the French Union is a particularly interesting study.

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[1] Its instability was, moreover, increased by the fact that these small colonies produce almost nothing except the sugar cane, and their exports vary with the crops. See A. LAPORTE, *Le Problème monétaire de nos anciennes Colonies*, th. Paris, 1908.

The first instance of a régime of stable exchanges between France and one of her oversea colonies occurred in Algeria, and the problem, strange to say, was solved before it had even been formulated. French metal coins had been introduced into Algeria, but the Bank of France's notes were not in circulation there, and, conversely, the Bank of Algeria's notes did not circulate in France. There was, therefore, an *Algerian franc* distinct from the Franch franc, so that the question of exchange should, in principle, have arisen. But the Post Office supplied money orders for payments between Algeria and France on the same terms as for internal ones. The Post Office would no doubt have discontinued this practice – as it did in Cochin China – if it had given rise to any serious difficulty. But as *the French Treasury had opened a current account with the Bank of Algeria*, all Algeria's debts and claims on France eventually passed through it. The result is that when Algeria's balance of payments is adverse, it is not necessary to export specie or to allow supply and demand to find their level on the exchange market: the Post Office and the Bank of Algeria are always able to effect the necessary payments, and *Algeria's surplus of indebtedness simply appears as a debit in the current account of the French Treasury.*

The account therefore acts as a conversion fund with practically unlimited funds at its disposal.

As the activities of the Bank of Algeria extend to Tunisia, the Tunisian Protectorate has benefited by Algeria's monetary system. This same system, which is as simple as it is efficient, was applied later in Morocco and Madagascar. And most of the other colonies – notably the Antilles – have also secured the benefits of a similar system by the opening of current accounts at one of the leading Paris banks.[1]

It was only in Indo-China that monetary reform was carried out, in 1930, with a view to stabilizing the piastre relatively to gold, on the pattern of the gold exchange standard, except that *the piastre, being money of account*, was henceforward defined as a *gold currency*, while the *silver piastres* continued to circulate as *money of payment.*[2]

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[1] See JOSÉ LE DENTU, *Le Régime monétaire et le Change aux Antilles*, th. Toulouse, 1943.

[2] It should be added that the native population of Indo-China uses zinc sapeks, joined into ligatures, as money. In the early days of colonization – in 1863 – it was decided to assign a value of 1 franc to a ligature. But the decision could not be enforced, and it has not been possible to assimilate the sapek to a sub-multiple of the franc or the piastre. It is an internal currency by means of which the natives can obtain, at a slightly variable rate of exchange, the money they require for payments either to other countries or to the administration. For further details consult BERTRAND NOGARO, *Le Régime monétaire des Colonies françaises*, in the *Traité de Droit colonial*, by PIERRE DARESTE, Chap. 16.

It should be observed, however, that with a stable Metropolitan currency like the franc of 1928, which itself had a stable parity with gold, Indo-China's currency was also linked up with the French franc.

The maintenance of a currency union does not, moreover, necessarily denote a single rate of exchange for all the territories in the union. Thus, from the end of 1943 the *French Union* has continued to constitute a currency union inside which all payments are effected on a basis of *parities which are constant, though not everywhere the same.*

A decree passed on December 25th, 1945, one day before the law ratifying the Bretton Woods Agreements, divided it into *three zones, each having its own parity*:

The first, which comprises North Africa, the Antilles, and Guiana, has the same franc as that fixed by the Bretton Woods Agreements for France, the parity being fr.119·107 to the dollar (this was raised to fr.214 on January 26th, 1946).

The second, which comprises the whole of French Continental Africa excepting North Africa, then Madagascar, and also St. Pierre and Miquelon, has a parity of fr.1·70 to 1 French franc.

The third zone, which includes the French establishments in the Pacific, kept the former parity of the franc to the dollar, namely fr.2·40 to 1 French franc (fr.4·32 as from January 26th, 1948).

The adoption of these different parities was dictated by economic considerations. During the war the rise in prices was much less in the third zone than in the second, and less in the second than in the first. On the other hand, the principal commercial exchanges of the three zones do not run in the same direction. A parity had therefore to be adopted for each zone which would avoid a needless increase in the cost of imports and would at the same time enable it to export on world markets.

But the currency union subsists on a basis of unrestricted reciprocal convertibility, the functioning of which is, moreover, facilitated by a new organization, the *Caisse Centrale de la France d'Outre-Mer*, which is responsible for the issue of notes and for exchange operations.[1]

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[1] In this connexion see an article by PAUL REUTER, *The Creation of Colonial Francs in the French Union*, published in a Dutch review entitled *Openbare Financien, Public Finance, Finances Publiques*, No. 3, 1947.

PART III

THE THEORY OF MONEY

CHAPTER I

THE CLASSICAL THEORY OF MONEY: OUTLINE AND CRITICAL EXAMINATION

§1. The classical theory of money and the interpretation of outstanding monetary events

Almost the whole of the classical theory of money can be summed up in the following formula: 'Money is a commodity, and its value varies inversely to its quantity.' It is, in fact, to this preliminary proposition that the classical doctrine looks for the explanation of almost all monetary phenomena.

This conception is simple of application where the interpretation of the phenomenon of monetary *depreciation* is concerned, when the depreciation can be related to the issue of paper money – hence, money which is not a commodity – and its undue multiplication; as in the case of the assignats. It would also appear to explain the fluctuations in the value of inconvertible paper like the greenbacks of the American Civil War.

Nor was Ricardo slow to explain in this way the premium on gold which materialized in England in his day under the forced-currency régime. A century later the exchange loss on the Spanish peseta was still ascribed to depreciation due to superabundance, although the depreciation consisted essentially of the exchange loss itself. And the theory was unhesitatingly carried to its practical conclusion in the shape of advice that the surplus notes which had been issued be burnt and the écus melted down into bullion to bring the rate of the peseta back to par.

In the same way, an alleged superabundance of rupees was diagnosed as the cause of the exchange loss on the rupee after the discontinuance of bimetallism, and here again it was believed that if the rupee ceased to be coined its rate would rise solely by virtue of its scarcity.

When finally, after the 1914-1918 war, the theorists were confronted with fantastic depreciation like that of the German mark, they saw this unprecedented phenomenon as if through a magnifying glass, as startling confirmation of the theory which held inflation to be the essential cause of all large-scale monetary depreciation.

When, on the other hand, we observe the incomparably more limited fluctuations of the purchasing power of money as registered by *price movements* over long periods, we cannot but think that these must be due to variations in the production of the precious metals, chiefly of gold. It is good money, commodity money; but does not the value of money, even commodity money, vary according to its quantity? Should not the variations in its quantity give us our explanation of the slow changes in its value, which varies inversely to the level of prices? If so, is it not true to say that, if money is a measure, it is a bad measure, a bad *standard*, being as it is a variable one?

Again, when we see *a premium on gold alternating with a premium on silver* over a long period of time, would not this point to the assumption that the metal which is at a premium is the one whose production is increasing less rapidly? We find, moreover, that this metal is being exported; *Gresham's* famous *law* is in operation, and 'bad money is driving out good'. But even so, cannot the explanation of this phenomenon once more lie in the *quantity theory*?

The extremely simple idea embodied in the concise formula that 'money is a commodity, and its value varies inversely to its quantity' dominates not only the theory of money, but the whole theory of economics. We find it cropping up again in the *theory of international trade*; for when a country has imported too much its monetary stocks are reduced; the result being that the value of the money is increased, or, in other words, prices fall, which stimulates exports and leads to a return to equilibrium.[1] The *theory of crises* provides us with another opportunity of applying this same principle. For when the crises are characterized by sudden variations of prices and production, this must surely, it would seem, have something to do with the quantity of money, since its variations act directly and indirectly on prices and production.[2]

And when finally, desiring to leave the region of pure theory and pass on to its application, we set out on a quest for *stable money* which would ensure stability of prices, or *neutral money* which would cease to disturb the normal progress of production, it is once more to the old conception of money bearing a value which varies inversely to its quantity that we turn for the solution of our two problems. Thus, in 1911 Irving Fisher advocated the adoption of a dollar with a variable gold content – he called it the 'compensated dollar' – the weight of which would be reduced so as to increase the number of monetary units when prices were tending to fall, and increased when the converse was the case.[3]

The partisans of neutral money, on the other hand, aspire to stabilize the quantity of money in circulation in order to bring about a contraction of the circulation when transactions are tending to expand, and vice versa.[1]

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[1] See BERTRAND NOGARO, *Cours d'Economie politique*, 4th Ed., Vol. 2, p. 371 *et seq.*

[2] See B. NOGARO, op. cit., p. 443.

[3] This idea was afterwards developed by its author (cf. I. FISHER, *Stabilizing the Dollar*, 1920), and it appears to have more or less inspired President Roosevelt's monetary policy in 1933.

We will not dwell here on the applications of the concept of commodity money and the quantity theory to the theory of international trade and the theory of crises.[2] We will postpone until our next chapter our critical examination of the idea of commodity money and the quantity theory, and confine ourselves here to discussing the principal applications given it by the classical theory of money in its interpretation of monetary phenomena. We will then study in turn the concept of monetary depreciation; the variations in the purchasing power of money and the idea of money as a standard; and the interpretation of bimetallism and the general theory of money.

§2. The concept of monetary depreciation

The classical concept of money as being essentially a commodity, the value of which varies inversely to its quantity, is on privileged ground when it is applied to the interpretation of a phenomenon of monetary depreciation such as that of the *assignats* of the French Revolution or the *greenbacks* of the American Civil War. These two instances are, moreover, quoted as classic illustrations of the quantity theory. And, indeed, if we look at these two experiments summarily and from their beginning to their end, we see in the one case unlimited and ever-increasing issues of paper money, which continued until the money had become utterly worthless, and in the second, restricted issues, accompanied at first by increasing depreciation, but followed, after the cessation of the issues, by a progressive recovery.

When we scrutinize the facts more closely, however, their interpretation assumes a more complex aspect, and in explaining them we should perhaps assign the leading role to the idea of commodity money. At the time of the French Revolution the French people had had little experience, apart from Law's short-lived experiment, of anything but metal money, and French monetary experts were completely wedded to the concept of *commodity money*. Now, the assignat was *backed by the national property*, and it was actually accepted by the State at its nominal value in payment for the property. On the other hand, *the assignats were quoted relatively to metallic money*, and in the *initial phase* we find that their rate varied much less according to the quantity put into circulation than according to the turn of events, as these showed *more or less prospect of the land by which they were backed being purchased and retained.* In the second phase *the rhythm of their depreciation accelerated with the issues*, which, moreover, became larger and larger as the rise in prices made increasing demands on the public purse. It was the vicious circle, from which in the end there is no emerging.

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[1] See VON HAYEK, *Preise und Produktion*, and *Ueber Neutrales Geld*, in the *Zeitschrift für Nationalökonomie*, 1933, p. 659 *et seq*; J. C. KOOPMAN, *Zum Probleme des neutralen Geldes*, in *Beiträge zur Geldtheorie*, 1933, pp. 324-59; PIERRE REYNAUD, *Essai sur la Monnaie neutre*, in the *Revue d'Economie Politique*, July, August, September, and October 1937; GOETZ GIREY, *La Théorie contre l'Inflation et la Stabilisation du Niveau général des Prix; La Monnaie neutre*, in the *Annales de Droit et des Sciences sociales*, 1936, No. 6. These theories would appear to take their point of departure from the ideas developed by the Swedish economist KNUT WICKSELL, in *Börsenkredit, Industriekredit und Kapitalbildung*, which are discussed by CH. RIST in his *Histoire des Doctrines relatives au Crédit et à la Monnaie depuis John Law jusqu'à nos Jours*, and a general survey, with an extensive bibliography, in L. BAUDIN's book *La Monnaie et la Formation des Prix*, I, p. 575 *et seq*.

[2] See BERTRAND NOGARO, *Cours d'Economie politique*, 4th Ed., Vol. 2, p. 371 *et seq* and p. 439 *et seq*.

Here, surely, is confirmation of the quantity theory. This view is justified, as we shall see later on, by the fact that *purchasing power was created which had no counterpart in the supply of goods on offer.* It should be observed, however, that the increase in purchasing power was by no means proportionate to the increase in the issues, since, as prices rose, a very much larger sum of money was required to meet the same amount of purchasing power. It would seem, then, that where there is extreme depreciation the depreciation is accelerated by a mechanism in which *psychological reactions* play a leading part.

When we turn to the case of the paper money issued during the *American Civil War* we find again that the idea of commodity money goes far to explain its depreciation. Here, again, we have what is primarily a depreciation of paper money in terms of metallic money, the depreciation relatively to goods, as measured by the price level, appearing as a subsidiary phenomenon. The contemporary American public still looked on notes as *promises to pay in cash*, and though the notes were temporarily inconvertible, the resumption of their redemption in cash was nevertheless anticipated. Accordingly, we see the rate fluctuate as the *prospect* of a return to convertibility became more imminent or more remote. New note issues were undoubtedly included amongst the events which had the most obvious reactions on the premium on gold. But such issues could be compensated to some extent by a reduction in other elements of the stock of money; furthermore, they reacted on the premium on gold from the time of their announcement, *before they were even carried out.* So here *the reaction was first and foremost a psychological one, founded on the idea of commodity money.*

All things considered, although the cases of the assignats and the greenbacks call for a somewhat complex set of explanations, they provide two instances of *depreciation mainly of an internal character* and measured in terms of another domestic currency, and which occurred in countries and *at periods when the public was still in the sociological phase of commodity money.* Hence, the classical theory, whilst it provides too simple and clumsy an interpretation, is reasonably adequate.

There is much less certainty about its application when we come to examine the example, though it is also an old one, of the depreciation of sterling between 1797 and 1820.

Ricardo, of course, supplied an interpretation which was strictly consistent with the classical formula. In his eyes, the premium on gold – the 'high price of bullion' – which ruled at this period, was the expression and the measure of the depreciation of notes which had become inconvertible. As he saw it, the fact of the Bank having been released from its obligation to redeem its notes in cash had had the result of making it less careful to limit its issues, and the increase in the quantity of the notes issued had had the effect of reducing their value. According to Ricardo, in short, *there was a premium on gold, a rise in prices, and an exchange loss because the notes had depreciated,* and *the notes had depreciated because too many of them had been issued.* Such is the classical doctrine of depreciation and exchange loss, and it was still being voiced a century later, in explanation, for instance, of the depreciation of the Spanish peseta. According to this doctrine, needless to say, a reduction in the quantity of notes issued is the *essential and sufficient condition* of a return to parity.

The case of sterling was in reality entirely different from that of the assignats or the greenbacks. The increase in the note issues was a very moderate one, and the British public does not appear to have felt any mistrust of notes which had become temporarily inconvertible. The premium on gold was therefore to all appearances predominantly an *exchange loss*, and the *depreciation* of the pound was mainly an *external* one. As for the *inconvertibility* of the notes, this had an infinitely more direct influence on the premium on gold than that which can be attributed to inflation; it *led to the disappearance of the outward gold point.* The export of metallic specie was actually prohibited; the export of bullion was still authorized, but as the Bank of England ceased to supply it and the coining of specie was forbidden, there was no longer any regular convertibility for foreign payments, and consequently no *stable outward gold point* to act as a fixed downward limit to the fluctuations in the exchange rate. As, on the other hand, England was at war, her trade balance was liable to become upset, and her balance of payments was affected as it was by the subsidies made to her allies. Finally, the premium on gold, which increased the price of imported products, might in itself explain, at least to a considerable extent, the small rise in prices – or in other words, the internal depreciation of the money which had become inconvertible.

The general import of these considerations was not lost on contemporary observers, and it was pointed out to Ricardo that the fluctuations of the pound, *which did not actually correspond to the variations in the issues*, might be due to the fluctuations of the balance of payments.

Thomas Tooke, in particular, who had already experienced the fluctuations of the Russian exchange, countered Ricardo's abstract deductive concept of monetary depreciation with a clear and realistic concept which represented the exchange loss as due to the inconvertibility of the notes, and this was entirely confirmed by subsequent events.

Such is the seduction of deductive theories, however, that the Ricardian theory continued to prevail until after the close of the nineteenth century, and even to be applied to cases where the only certain expression of the monetary depreciation was the exchange loss itself.

The classical concept defended by Ricardo, therefore, was that of depreciation, *discreetly left undefined*, but doubtless both internal and external, a reduction in the value of money, supposedly related to its superabundance. The depreciation would explain both the rise in internal prices and the exchange loss. Actually, before we can talk of depreciation *we must first know in what it consists*, and when we speak of a premium on gold we must seek to find out how it arose, and whether we are not dealing with what is essentially an exchange loss. If so, it cannot be explained as due to '*depreciation*', *which would be none other than the exchange loss itself*, and it would be the exchange loss itself which would need explaining. A lucid explanation is to be found in this case in the disappearance of a stable outward gold point and the adverse balance of payments.[1] As regards the rise in internal prices, if there is really a superabundance of money, this may, of course, be looked on as a contributory cause, but *the exchange loss itself will inevitably tend to send prices up*, since it necessarily increases the prices of *imported products*, and sometimes those of export products as well.

These considerations merit the especial attention of the economist when studying the instances of depreciation in the second half of the nineteenth century. For in such cases the essential depreciation had ceased to consist in anything but the actual exchange loss. This was what occurred notably on various occasions in Italy, in Greece, in Spain, and in most of the countries which were directly or indirectly affected by the silver crisis. The prices of imported products were certainly increased by the exchange loss, but the general price level in the countries concerned, which were mostly poor ones, remained very low. So the exchange loss cannot reasonably be attributed to the mystic virtue of an imaginary abstraction called depreciation, or to a previous rise in prices which by hampering exports had upset the balance of payments

[1] Ricardo objected that the exchange loss resulting from an unfavourable balance of payments would not appear to exceed 4 or 5 per cent. But though this may have been true in Ricardo's time of a currency which was freely convertible into metal, it was by no means so where inconvertible notes were concerned.

and depressed the exchange rate. The only certain manifestation of the depreciation itself was to be found in the exchange loss. And if the vociferous advice to burn the notes and so make an end of them had been acted on, it would have been about as much use as putting a poultice on a wooden leg. It was in a return to convertibility on a stable basis that the solution of the problem should first have been sought.

As we have seen, this was exactly what was done in India. The reformers, imbued as they were with the classical doctrines, believed they were forcing up the rate of the rupee by reducing its numbers, and it was for this reason that they suspended the coinage of the rupee. But it was not only the actual coinage which they had suspended – they resumed it, incidentally, before very long – it was *freedom of coinage*; and by suspending freedom of coinage they had brought about the disappearance of an *unstable and declining inward silver point*, in company with a similar outward silver point. Stabilization was achieved at the desired rate when their place was taken by an inward gold point and an outward gold point.

We saw, too, in the sequel that an effective substitute for the gold points can be found in a system of direct convertibility into foreign currencies at a fixed rate, which points to the fact that the idea of commodity money and the quantity theory have little to do with the solution of the problem.

The great monetary phenomena witnessed after the 1914-1918 war confirm the inadequacy of the old theory of monetary depreciation to explain present-day monetary crises. At first sight the depreciation of the mark looks like a new edition, revised and enlarged, of that of the assignats: here, it would seem, is the same sequence of events: the inordinate issues of notes, the never-ending rise in prices, the exchange loss, and the final collapse of the currency. Now there was, of course, during the war and immediately after it, a rise in prices, which may be considered as the collective result of the insufficiency of production, the abnormally high cost of imports and the creation of purchasing power which had no counterpart in production. But in the closing phase we witness the spectacle of *an exchange loss related to the disequilibrium of the balance of payments* – which the exchange loss incidentally helped to enhance by encouraging the export of capital – *leading to a rise in prices, which in turn called for increasing recourse to the issue of notes;* but with *the note issues lagging far behind. Here the traditionally accepted order of events was reversed, and the classical theory is absolutely powerless to provide us with an explanation.*

The theory had, moreover, already proved inadequate to explain either the fluctuations or the stabilization of Austria's exchange at the end of the nineteenth century. It was quite capable of accounting for the phenomena observed so long as silver was at a premium over the notes, but how could it explain the fact that the paper money afterwards rose to a premium over silver, which, though it had depreciated relatively to gold, nevertheless continued to be a good solid commodity? This was a real conundrum to contemporary economists, though for business men the evolution of the rate of the florin, then of the crown, held no mysteries. The fact is that Austria's monetary stocks consisted mainly of inconvertible paper money, and the *exchange loss* on it had up to 1873 been kept in moderate bounds *relatively to both gold and silver coins*, which had up to that time stood together; the loss was usually quoted in respect of silver, but it might equally well have been quoted for gold. After 1873, i.e. after the disappearance of bimetallism, silver, for the reasons explained above, began to depreciate; from then onward the *paper money continued to fluctuate slightly in relation to gold without following silver in its fall, Austria's media of exchange being sufficient to obviate the necessity of exporting silver in order to effect external payments.* Hence the appearance of a premium on silver.

All this becomes perfectly understandable when it is realized that *once a fiduciary currency has borne a certain exchange ratio to the other domestic currencies*, it can preserve the same relationship, or one more or less approaching it, *according to the conditions on which its conversion can be effected on the exchange market.*

We can then understand how and why *currency blocs have been formed in recent years which fluctuate relatively to gold, but are firmly welded one to another, like the sterling bloc.* We can see, too, how it comes about that a currency with no metallic basis whatever, like the *German mark*, can remain *stable relatively to gold and to the other stable currencies*, provided an adequate convertibility device is in operation, and provided also – for, as we shall see, the quantity theory, though frequently misapplied, still holds good – that it is not issued in excessive quantities.

§3. The classical theory of fluctuations in the value of metallic money

Prices as a whole, that is to say average prices, fluctuate through time, and consequently the value of money as compared with commodities and services varies correlatively. A price is, in fact, the ratio between a variable number of monetary units and the unit[1] of goods or services which forms the basis of the market quotation. Thus the price in francs of a kilogramme of meat is the ratio between the number of francs paid out and a kilogramme of meat, for instance, $\frac{80}{1}$; and the price of a dozen eggs is the ratio between the number of francs expended and a dozen eggs, for instance, $\frac{18}{1}$, according to whether the unit is one egg or a dozen eggs. The value of the monetary unit per unit of goods is the inverse ratio of the price, or, in the instances given above, $\frac{1}{30}$ and $\frac{1}{18}$. *The value of the money in relation to the goods as a whole will therefore vary inversely to prices as a whole.* Now, as the variations of prices as a whole are measured in practice by an index of *average* variations, we may say that the *variations in the value of money correspond to those of the index figure reversed*: if prices have doubled, the value of the money is reduced by half, or to put it differently, if the price index has risen from 1 to 2, the value of the money will have fallen from 1 to $\frac{1}{2}$.

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[1] The unit quoted on the market is usually a physical unit such as a hat, a kilogramme of bread or a litre of wine. But it may also consist of a certain invariable number of physical units, such as a dozen eggs or 50 kilogrammes of coal.

When it is desired to measure the variations of the *purchasing power* of the money more exactly, the relative sum of money expended on each category of goods is calculated and a corresponding coefficient is applied to the index figure. Thus, if food accounts for half the expenditure, clothes and rent for a quarter and miscellaneous items for another quarter, allowance will be made for the fact that variations in food prices affect the consumer's expenditure twice as much as the others, and before the final average of prices is taken the coefficient 2 is applied to the figure representing food prices. This will give a *weighted* index, which will express more exactly the variations in the purchasing power of a given sum of money due to price variations, but which will take account of the place occupied by the goods in question in overall expenditure.[1]

This point made, we can take it as an established fact that the value of money relatively to goods varies inversely to the prices of the goods, and that *a rise in prices and a fall in the value of money, or a fall in prices and a rise in the value of money, are consequently synonymous.*

This elementary arithmetical truth has not always dawned on orthodox economists. They have frequently written: 'It was not prices which rose, it was the value of the money which fell' – as if the two expressions were not synonymous! – or: 'A fall in the value of money *causes* a rise in prices', as if a fall in the value of money did not *consist* in a rise in prices!

This error is no doubt due not so much to failure to grasp a mathematical axiom as to faulty language, and the idea which it is intended to convey is that a rise or a fall in prices appears to be *attributable* to money, or to put it differently, that the change which is seen to occur in the exchange ratio between units of money and a commodity unit arises from a factor which acts in some way on the money; and this factor, in the eyes of the economists, is the quantity of the money. 'It is not prices which have risen, it is the value of the money which has fallen' means, when expressed more accurately, 'Though the exchange ratio between the money and the goods has changed, this is not due to the action of factors which affect the goods – such as a rise in the cost of production – but to the action of a factor which affects the money; an increase, in fact, in its quantity.'

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[1] See BERTRAND NOGARO, *Cours d'Economie politique*, 4th Ed., Vol. 1, p. 375.

For just as the traditional theory attributes any depreciation of paper money, even when it is only characterized by an exchange loss, to its over-issue, so it ascribes the much more limited variations in the value of metal money, even of gold itself, relatively to goods as a whole, to variations in the ratio between the quantity of the precious metal and the quantity of goods to be exchanged. Very often, by a process of simplification which is somewhat misleading, the orthodox theory places the whole responsibility, even for the variations in the value of metal money, on the variations in the quantity of precious metal introduced into the monetary circulation.

Consequently, when there is a general – or average – movement of prices, the monetary factor is always brought into the picture, and movements of prices ascribed to a change in the quantity of money. It is indeed contended by many writers on economic subjects that only a variation in the quantity of money can give rise to a *general* variation in prices; their argument runs like this: 'If there is a rise in the prices of certain commodities, the market for them will absorb more money; now, as the other markets will thus receive less money, there will be a compensatory fall on these markets. Conversely, if certain prices fall, the money thus released is directed to other markets, where there is a compensatory rise. It follows that a general rise or fall in prices cannot be the result of price variations caused by the particular position of any one market. If there is a general rise, there must be more money in circulation, and if there is a fall, there must be less money.'

The variations in the price level would on this view be merely the expression of variations in the value of money due to the variations in its quantity – or at least in the ratio between its quantity and the quantities of goods or services to be exchanged. The phenomenon would be essentially a monetary one, and it would be wholly explained by the quantity theory.

As we shall see in the following chapter when we proceed to our critical examination of the quantity theory, this interpretation implies that the quantity of money put into circulation in a particular community over a given period of time must necessarily suffice for all the exchanges, and that it must also be entirely absorbed by them. But before going any further we must see how far the above line of reasoning is justified.

Now, we can only say that a rise in prices on a particular market absorbs more money, or that a fall in prices releases money, if the quantities exchanged are constant. But when prices rise the quantities exchanged tend to become reduced, either because the rise originates in a reduction of the quantity on offer, or because it leads to a reduction of the quantity forming the object of the demand, or for both reasons at once, and the opposite happens in the event of a fall. We cannot say, therefore, that a rise of prices on one market reduces the quantity of money available for the other markets and by so doing leads to a compensatory fall in prices. Neither can we say that a fall in prices on one market necessarily releases part of the money which formerly went to that market and causes it to flow to the other markets, where it leads to a compensatory rise.

So it is not correct to say that a general movement of prices, or, in other words, a variation in the value of money in relation to goods and services as a whole, is essentially a monetary phenomenon. It may be the result of the various factors which affect the different markets. And this is all the more feasible inasmuch as prices are all more or less interlinked.[1]

Whatever the causes of what are known as *general* price movements, their existence is nevertheless sufficient to make the value of money relatively to the goods and services of which they are the reversed expression, vary constantly in course of time. We shall have occasion to revert to this fact later, for it must inevitably have a part to play in the theory of money.

§4. The concept of the monetary standard

The expression 'monetary standard' as it is used in economics has two separate meanings, though the idea underlying them is common to both. The standard metal in a monetary system is the one which is regarded as forming the basis of the system, which means in practice the one which is accepted for free coinage – which would seem to testify to the fact that it is commodity money – and which is unlimited legal tender. It is in this sense that we speak of the gold standard or the silver standard and also – though not without raising a serious theoretical problem – of the double standard. The word 'standard' is also used to designate money in its function as a measure of value when comparing it to the measures of length, weight, etc. But though when it is used in this sense it embodies a different idea, the two ideas are merged into one in the minds of the classical economists, who do not admit that a normal monetary system can be constructed on anything except a solid basis, metallic money being the commodity money *par excellence*, and who can, moreover, scarcely conceive of non-commodity money acting as a measure of value. As they see it, paper money can only have a value, or at least a value which is at all stable, in so far as it is convertible into metal; so it is really in relation to metallic money, they think – even when the notes serve as media of exchange – that prices are fixed; hence it is really the metallic money which acts as the standard, the measuring-rod.

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[1] The cost price of a commodity, and consequently its selling price, depends on the prices of the materials of which it is made. The selling price of a commodity, on the other hand, depends on that of its by-products and that of its substitutes. As regards the interrelation of prices, see BERTRAND NOGARO, *Cours d'Economie politique*, 4th Ed., Vol. 1, p. 369 *et seq.*

But these same economists think that even good money, sound commodity money, is a bad standard: for it is a 'variable standard'. They compare it, for instance, with a yard measure, and they say: 'Though my yard measure tells me that this tree is taller than it was last year, or that this wall that is being built is higher than it was last week, it means that the tree has grown, or that the builders have been at work'. No one would dream of saying that it was the yard measure which had grown shorter. But when the price of a commodity has risen, we cannot know *a priori* whether it is really dearer or whether it is the money which has lost its value. If we use a copper bar of a certain weight for weighing commodities, we know that it is a constant measure of weight at all times and in all places,[1] but if we use it as money we cannot tell whether it will always have the same value everywhere. So it cannot serve to measure value as reliably as it measures weight. 'Even good money', they conclude, 'is a bad standard, a variable standard.'

The truth is that the problem is not correctly stated. Whatever the money, it performs its function as a gauge of measurement, and in this exact sense it is not true to say that it is a variable standard.

Thus, at a date which we will call A, we exchange commodity *a* for 2 monetary units, commodity *b* for 4, and commodity *c* for 8 units. By the very fact of doing so we *measure exactly* the exchange ratios which exist between the three commodities *at the given moment.*

On date B the ratios have altered: commodity *a* can be exchanged for 3 monetary units, commodity *b* for 6, and commodity *c* for 10. This in itself gives us an *exact measure of the changes of value expressed in time*: commodities *a* and *b* are worth half as much again on date B as they were on date A, and commodity *c* is worth a quarter more.

The measuring-rod has once more done its work.

We cannot, of course, deal with a unit of measurement expressed in time as easily as we can with a unit of length or weight. Thus, if the price of corn has changed in a ten-year period from 100 to 200 francs a hectolitre, it will not be sufficient simply to record the change as it stands.

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[1] We quote the expression generally used. The measure is really one of mass, not of weight. As a matter of fact, the degree of weight varies in different latitudes, but as the latitude has the same effect on the 'weight' and on the object weighed, the effectiveness of the measuring-rod remains unchanged.

The level – that is to say, the average – of prices must also be taken into account; if the level has not varied we can say without any qualification that the price of corn has doubled, for it has doubled compared with the other commodities as well as compared with the money. If, on the contrary, the price level has also doubled, we find that the price of corn has not varied in relation to the other commodities, whereas the value of the commodities as a whole has doubled only in relation to the money. The popular version of this, which is an incorrect one – see below, Chap. II, §4 – though its meaning is clear, is that the value of the money has changed: whence the idea that it is a variable standard.

Money does nevertheless give us – apart from a few material difficulties – all the measures we need to enable us to define the exchange ratios of the various commodities to the monetary unit and to one another. *It is not the measuring-rod, but the purchasing power of the money, which varies.*

But the principal reason why money is thought to be a variable standard is because according to the classical theory the prices which it serves to record are deemed to be affected by the money itself. If prices have doubled, it is, of course, the money which tells us so. But why have they doubled, they ask, if not because the quantity of money has increased?

Such is the classical theory, which we have now discussed in part, and with which we will deal more comprehensively in our next chapter. But it is indeed a strange measuring-rod which alters the dimensions of the objects it is to measure before it starts measuring!

It is nevertheless true that under the classical theory the problem is and remains improperly stated. Money is, of course, not a gauge of measurement like any other, because it only records relationships which alter with time. But it also records such changes in time, so that, all things considered, it is an accurate gauge. It is in its function as a *medium of saving*, *a store of value* and a '*standard of deferred payments*', that it becomes a complicated and clumsy instrument, the use of which calls for technical devices and legal expedients which do not work satisfactorily in practice.

We shall see further on, moreover, that the concept of standard money is not necessarily associated with that of commodity money, and that fiduciary money, or even abstract money, can under certain conditions act just as efficiently as metallic money as a measure of value.

§5. The functioning of bimetallism and the general theory of money

The classical theory of money is, as we have said, entirely dominated by the preliminary proposition that 'money is a commodity, and its value varies inversely to its quantity'. When the legislators of the year

IX attempted to establish a modern monetary régime in France, it was this maxim which inspired them. Now, metallic money consists mainly of gold and silver coin. The two metals are sound commodities, and when they were accepted for free coinage it was thought that the procedure simply entailed the physical transformation of large ingots of various weights into small disk-shaped ones of a certified weight – since the monetary unit was itself defined by a specified weight of fine metal.

But this conception inevitably came up against one difficulty: practical exigencies demanded that a constant legal ratio of exchange be fixed between the coins made of the two metals – four écus of 5 francs to one louis of 20 francs – and yet *how could a constant exchange ratio be preserved between these small disk-shaped ingots made of two different metals, hence of two different commodities?*

The fluctuations of the exchange ratio between the two metals seemingly registered by the quotation of silver in sterling, a gold currency, on the London market, appeared to lend confirmation to these theoretical scruples. For saying that gold and silver were *commodities* did not only mean that each metal had a commodity value because it was capable of satisfying individual requirements; *it implied that their exchange value was fixed like that of the great majority of commodities, on a free competitive market.*

Now, we have already seen that this was by no means the case. The oscillations in the ratio between gold and silver under bimetallism were, in fact, confined within very narrow limits, and we already know why this was so.

The system of free coinage gives the precious metals selected for this privilege an unlimited market at a fixed price: every holder of a certain weight of precious metal knows that this weight of metal represents, by law, a definite number of monetary units, and if coinage is free, he is certain, furthermore, of actually obtaining this specified number of monetary units in exchange for his bullion. He therefore benefits by a *minimum price.*

Conversely, as large stocks of precious metal have been accumulated in the form of money, the buyer for his part can, by paying a small melting fee, always obtain a specified weight of metal at a price equal to the number of monetary units stamped on coins representing the same weight of metal. The buyer therefore enjoys the benefit of a *maximum limit,* beyond which the market price cannot rise.

Hence it comes about that the régime of free coinage creates an 'organized' market, which cannot fluctuate beyond a maximum or a minimum limit, for the selected metals and stabilizes their rate relatively to the monetary unit; furthermore, if it is applied simultaneously to gold and silver, it automatically stabilizes the exchange ratio between them.

This stability was, moreover, not confined to the bimetallist countries. It also benefited other countries, at least as long as the precious metals were freely importable and exportable and the gold and silver reserves of the bimetallist countries were sufficiently large to ensure the effective conversion of one metal into the other. We have shown above how the silver market in London, which is where the world 'commercial' ratio of silver was actually established, was dominated by the fact of sellers being able to send their surplus silver to Paris or Brussels to obtain payment in gold, and of buyers being able to procure silver from the stocks of the bimetallist countries, which they paid for in gold: with the result that *the price of silver in gold necessarily corresponded to the legal ratio of* 1 *to* 15½, *plus or minus the small cost of conversion.*

Thus it is most definitely not the concept of commodity money in association with the hypothetical competitive market which is usually assumed to exist, which explains the functioning of bimetallism; it is, on the contrary, the concept of an organized market, tending to stabilize the rate of each metal in terms of monetary units, and by so doing to stabilize the exchange ratio between them.[1] The classical theory proves itself completely inadequate here.

But the functioning of bimetallism raises a theoretical problem which is a much more serious one. For if we admit that money, the measure of value, is essentially a commodity, in relation to which of the two metals were the prices of the other commodities fixed in the bimetallist countries? Which one formed the basis of the monetary system? Which was the standard metal? As both were accepted for free coinage and both were regarded as money commodities by the makers of the laws, the problem when stated in this way is unanswerable.[2] The functioning of bimetallism is therefore unintelligible if we take as our starting-point the principles which guided its sceptical promoters. *But it becomes intelligible if we visualize prices, including those of gold and silver, as fixed in relation to the abstract monetary unit* – a concept which will be explained in a later chapter.

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[1] As regards the objections to which the idea of the precious metals being purchased at fixed prices gives rise in theory, see below, Chap. III, §2.

[2] This has been termed the alternative standard, the standard metal being regarded as the one in respect of which the premium on the other metal was quoted – as if bimetallism was based sometimes on one standard and sometimes on another. But this convenient formula is merely an evasion, and no positive meaning can be attached to it.

CHAPTER II

THE CONCEPT OF COMMODITY MONEY AND THE QUANTITY THEORY

(Being a continuation of the critical examination of the traditional theory)

§1. The money concept and the commodity concept

As we have just seen, the classical theory of money is based almost entirely on the simple proposition that 'money is a commodity, and its value varies inversely to its quantity'. In our last chapter we examined the principal applications of this ruling idea. We found that it does enable us to interpret certain of the great phenomena of past depreciation, such as that of the assignats in France and the greenbacks in the United States. On the other hand, it is ill fitted to account for many other typical cases of monetary depreciation, and it has no place in the explanation of the variations in the value of metallic money. Finally, we have been led to conclude that the concept of commodity money in the sense in which it is understood by classical economists, renders the problem of the functioning of bimetallism incapable of solution.

We must now carry our critical survey to its conclusion by discussing the idea of commodity money and the quantity theory.

In the eyes of the classical economists, money is essentially a commodity; *its value is determined like that of any other commodity* on an ordinary competitive market; it is only its commodity function which enables it to act as a *monetary standard.* Fiduciary money is only of value in so far as it *represents* commodity money and actually enables commodity money to be *obtained.* Even when it is inconvertible, it is *the hope* of a resumption of cash payments at some future date which maintains its rate to a certain extent. The classical writers themselves doubtless knew of cases of paper money continuing to be inconvertible, but recourse to paper money was obviously only an expedient, and it was hardly worth while constructing a theory out of an expedient; then, too, paper money very often ended by losing all its value, and was not this yet another confirmation that money is essentially a commodity?

In economics, moreover, as in other branches of sociology, a belief must often be treated as if it is a fact. For a belief can be a living force and engender phenomena which eventually become objective factors. Now, the concept of commodity money was not only a theoretical one professed by a few thinkers. It was current amongst the public at large.

It represented an attitude of mind which was widespread at the time when fiduciary money first began to be freely used. It is for this reason that it behoves us to introduce it into the theoretical picture when it comes to explaining monetary phenomena which date back any length of time. We have seen how the rate of the assignats was influenced largely by the future prospects of the national property which they served to purchase. Again, at the time of the American Civil War the agio on the notes – which would also appear to have been mainly an internal one – increased or decreased according as the prospects of a resumption of cash payments receded or revived. The Russian people, on the other hand, had been accustomed since the seventeenth century to using money tokens, metal fiduciary money made of copper, which was unquestioningly accepted at its nominal value in internal exchanges. They had also become accustomed to paper notes. And when gold pieces were introduced into the circulation at the end of the nineteenth century there was some little difficulty in getting the peasants to accept them.

So it *may be necessary* that money should be a *commodity*, at least in the sense that it must be an asset which is of direct use to its owner apart from its monetary function. This will be the case as long as there is a general belief in the necessity for it to be so, *as long as the members of the community where the money is to circulate are unwilling to accept it unless this condition is fulfilled.*

There is, however, one major consideration which *detracts from the potency of this argument*, and it is related to one of the essential attributes of money: *money is not accepted for its own sake, but for the purpose of being exchanged subsequently for goods or services.* When money is a commodity, it is by this criterion that it can be distinguished from other commodities. But it is self-evident that if money is not accepted for its own sake, with a view to its direct use, it is not vitally necessary that it should be a commodity, or, to put it more accurately, that it should be an asset which has a use independent of its monetary function. What interests the receiver of the money most is the fact that it retains its purchasing power; having accepted it with a view to future purchases, he knows he will be able to make his purchases afterwards. Commodity money may incidentally provide greater security than fiduciary money in this respect, and it may be preferred on this account.

There is another reason, however, why the classical theorists, and even many contemporary theorists, hold money to be essentially a commodity: it seems to them that this must necessarily be the case if money is to act as a *standard*, a common measure of value. There is, as a matter of fact, something unnatural in the thought of an exchange ratio being set up between a commodity and an abstract monetary unit. We can compare a commodity with another commodity, it would seem, but not with an abstraction.

Here it is necessary to make a distinction. Regarded from the standpoint of the genesis of money, it is difficult to imagine a community of human beings agreeing from the outset that such and such a commodity shall rank as No. 1 in the scale of values, another as No. 2 and yet another as No. 10 or No. 15. It is much easier to imagine exchange relationships being laid down between a plough and a number of sheep, or between a measure of corn and a specified weight of metal. It does really seem that money was originally a commodity, and that the commodity as such had *acquired a certain exchange value before it became the regular medium of exchange and by that very fact the common measure of value.*

As, however, money is accepted not for its own sake but with a view to its subsequent exchange, it is not surprising that as time went on *the monetary unit gradually took precedence over the money-commodity.* With the appearance of coins, which frequently bore names which did not correspond to the weight of metal in them, *people grew accustomed to paying more attention to the number of monetary units than to the weight of metal.*

We have seen, for example, how under the *ancien régime* money of account came into use which was distinct from money of payment. And the lawyers steadfastly maintained that it was for the princes to assign what value they pleased to the real money.[1] It was really a new departure when the legislators of the beginning of the contemporary period decided to make the unit of account *identical* with the unit of real money by defining the monetary unit, *once and for all,* as equal to a specified weight of fine metal.

This measure was very fortunate in that it favoured the establishment of stable relationships between the different domestic currencies, which became convertible one into another on the basis of their respective weights of fine metal. But it must be recognized that whilst the monetary unit had originally been identified with a commodity, the use of coined money led to the goods or services which formed the object of the exchange being compared not with commodity money, but with the purchasing power represented by the monetary unit. Thus in 1914, when gold coins still circulated freely, a person fingering a gold louis would have been hard put to it to set an exact value on his little disk of precious metal, but he knew that it represented 20 francs, so that the louis spelt to him a reasonably well-defined amount of purchasing power – *but no more and no less than if he had received a note or a cheque for the same sum.*

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[1] Pothier himself could still declare in the eighteenth century that 'specie only belongs to private persons in token of the value which it has pleased the Prince to place on them'. See BERTRAND NOGARO, *Les Principes fondamentaux du Droit monétaire français. Rev. Trim. de Droit Civil,* 1930, separate reprint with appendices, in the Sirey Collection.

§2. The value of money in metallic-currency systems: the so-called 'commercial rate'

From the rational point of view the question of commodity money holds no mysteries for us: money, which in its beginnings was a commodity and accepted not for its own sake, but with a view to subsequent exchanges, became a medium of exchange, but from a certain stage in its sociological evolution it ceased to be *necessarily* a commodity, and *became a token representing a specified volume of purchasing power.*

This being so, are monetary systems really based on commodity money?

Let us ask ourselves first of all whether by 'commodity' we mean a commodity in the sense understood by the classical economists, one, that is, whose value is established on a free competitive market.

Let us take by way of example a gold-monometallist country which, in common with others, accepts gold for free coinage. Its currency includes subsidiary coins made of various metals, principally silver. There are notes as well, but these are convertible into gold. The system would appear, therefore, to be based on gold, and the monetary unit, defined by a specified weight of gold, to consist of a certain weight of commodity gold. For the other coins are not tender outside the country. Gold, on the contrary, can be exported, and its 'commercial' value is very much the same abroad as at home. So the gold standard would appear to be the gold commodity measured by weight.

If we look into the facts more closely, however, we observe that there are quite a number of other countries which accept gold for free coinage. Consequently, it is only necessary for gold to be exported from one country and imported into another, where it is melted down and reshaped weight for weight, for a given weight of gold to provide an amount of monetary units calculable in advance – by the actual definition placed on the monetary units – and corresponding to an amount likewise defined by the parity between the currencies, in the country of origin. Hence *the 'commercial rate' is not a rate constituted on a free market; it is the rate which corresponds to the purchase price laid down once and for all for a specified weight of gold in each of the domestic monetary units of the gold-standard countries.*[1]

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[1] A. AFTALION reaches a similar conclusion in his book *L'Or et les Prix.* Mention should also be made in this connexion of G. F. KNAPP's *Staatliche Theorie des Geldes,* which was published in 1905. The present author read this book in 1908, when he was correcting the proofs of his article on *The Bimetallist Experiment of the Nineteenth Century and the General Theory of Money* (*Rev. d'Econ. Polit.*), which embodies in embryo the ideas which he later developed at length. But a perusal of the works of the three writers suffices to show that each arrived at his conclusions in his own way.

Metallic monetary systems are therefore not based on the rate of a commodity – a metal – fixed on a competitive market. The rate of the commodity which assumes the form of money is fixed in different circumstances from that of other commodities.

This is due firstly to the fact that the commodity which becomes money thereby commands an *unlimited market*. An ordinary commodity is only accepted if it is needed; a money commodity is always accepted, since it can be exchanged at will later on for any other commodity or any other service desired.[1] Added to which, when the money commodity ceases to be put into circulation directly and is first transformed into monetary units, *the metal accepted for free coinage not only enjoys an unlimited market* – like bullion circulating as weighed money – but it can be *sold at a fixed price*. Thus, even if the cost of production of the metal falls and competition amongst producers becomes keener, as long as the actual definition of the monetary unit remains unchanged, the bullion can always be sold at the same price, which is equal to the number of monetary units corresponding to this weight of metal.

This interpretation conflicts, of course, with the classical theory, which says that the value of a specified weight of precious metal cannot be defined by a specified number of monetary units – since the units themselves are identical with a specified weight of metal – but only by the quantity of goods which can be purchased with this weight of metal. Now, the profit which a producer of precious metal makes on the sale of the metal does of course depend, in the last analysis, not on the quantity of monetary units he receives, but on the quantity of goods he obtains in exchange for the units. All sellers are in the same case, however, and the producer of a precious metal which is accepted for free coinage does none the less enjoy the privilege, firstly of an unlimited market and secondly of a guaranteed selling price. As long as the definition of the metallic monetary unit remains unchanged, the selling price will remain constant in spite of a possible fall in cost prices or heightened competition, and in the event of devaluation the selling price is increased by the same amount.[2]

It is true that it can be said that if the price corresponding to the number of monetary units contained in the bullion is greatly in excess of the costs of production, production will be stimulated, with a resulting increase in the supply of money, which, by causing the price of goods to rise, will correspondingly reduce the value of the metal relatively to the goods. But in actual practice the quantity of money which results from an increased production of the precious metal is very small compared with the aggregate existing stocks of metal, and still more so compared with world stocks as a whole, if we include fiduciary and bank money. Thus it is still true that the producer of a precious metal which is accepted for free coinage is certain of an unlimited market at a fixed price, while he is only exposed to the risk of the price level being affected by possible variations in the supply of money as a whole, *to the same extent as every other holder of money.*

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[1] It can, of course, be said that, after all, a money commodity would lose its value if it were offered in excessive quantities in a small community with a limited production, if too many of the inhabitants produced it, for this would lead to a proportionate reduction in the production of objects of direct utility, and in the end people would refuse to take it. But the production of the money commodity actually plays a very small part in production as a whole.

[2] Shareholders in gold mines are fully conscious of their privileged position, and so, too, are the public authorities, which in the leading gold-producing countries such as South Africa take care to secure a good share of the increment resulting from an increase in the purchase price of bullion by special taxation.

Thus, there are good grounds for saying that a precious metal which is accepted for free coinage enjoys an unlimited market at a fixed price, and that its value is consequently not determined like that of any other commodity bought and sold on a competitive market. Even metallic money, therefore, cannot be said to be based essentially on a money commodity in the sense in which it is understood by classical economists.

§3. Existence at the present day of demonstrably sound currency systems having no mass of metal

There do actually exist currency systems which have absolutely no metallic basis, whose monetary structure, that is, is not based on commodity money of any kind.

We have already had occasion to observe what happened in Austria-Hungary and in Spain in the nineteenth century. Let us consider first the case of Austria-Hungary, which caused so much heart-searching amongst economists. The florin, which was represented chiefly by large stocks of notes, had long suffered from an exchange loss, which was quoted in the form of a premium on silver. After 1873, when silver depreciated, the rate of the florin parted company from that of silver and floated as it were between the level corresponding to the unstable silver point and the gold point which would have represented its former theoretical parity. It was impossible to explain this phenomenon by the theory of commodity money; it seemed that in the absence of a stock of gold sufficient to ensure settlements on a stable basis with gold-currency countries, the rate of the florin ought by rights to have continued to be linked to that of silver.

No surprise was felt, however, by practical men of business, partly, no doubt, because they were not given to reflecting very deeply about the foundations on which the value of money rested, but chiefly because they grasped the concrete realities of the problem. The florin, which was an Austrian monetary unit, had really depreciated before 1873, *not only relatively to silver, but relatively to both gold and silver, which were closely interlinked.* Austria's monetary reserve consisted principally of paper, and her metallic reserve was insufficient to ensure the regular convertibility of the paper for external payments. This was the cause of the exchange loss. After 1873 payments to foreign countries continued to be made by some means or other, doubtless with the aid of external credits; the exchange remained somewhat unstable except when the Austro-Hungarian Bank intervened on the exchange market to stabilize it; but as Austria was not reduced to using what was left of her stock of depreciated silver for foreign payments, the rate of exchange did not fall to the level of an unstable silver point.

This was far from meaning that the paper notes, which had no commodity value, were worth more than silver. All it meant was that despite the fact that she held a small stock of metal, which was not *used* for external payments, Austria-Hungary was, in fact, on a paper-currency régime, and that she was operating a system which was without any metallic basis, as coined money played only a secondary part in internal transactions. And when – in 1893 – the Austro-Hungarian Bank started to intervene on the exchange market with the intention, as we have explained above, of securing the convertibility of the florin, the paper money became stable in relation to the foreign coins circulating at par with gold.

Many other countries, notably in South America, have, moreover, existed under a régime of paper money, the exchange value of which has not always been attributable to the prospect of its future conversion into metallic specie.

Nowadays the psychological attitude of the public is *no longer such as to make it necessary for money to be a commodity*: fiduciary or abstract money is accepted by everyone regardless of everything except *the permanence of its purchasing power*: people want to exchange their money tokens, *not for one of the precious metals*, which would be simply one more money token, but for *a quantity of goods or services corresponding to the amount of the money they have paid out.*

Now, the approximate stability of the purchasing power of fiduciary or bank money *is not necessarily dependent* on its convertibility into metal. The only conditions necessary to achieve stability are that it shall not be issued in excessive quantities, thus creating purchasing power with no counterpart, which would lead to a rise in prices, and that its convertibility into foreign currencies at a rate which is fixed or nearly so, is guaranteed. As we have seen, this latter aim can be achieved through the agency of conversion organizations such as the exchange equalization funds or by a strict system of exchange control. At the present time the monetary systems of the world bear witness to the fact that when a metal – gold, in fact – does have a part to play, it is little more than *one external convertibility device amongst others*, and that monetary systems can function satisfactorily without a metallic basis – hence, without being founded on commodity money – provided they are equipped with suitable convertibility machinery.

§4. The quantity theory as suggested by observation

We have said that the classical theory of money is based essentially on two propositions, namely: 'Money is a commodity; its value varies inversely to its quantity.' We have just analysed the first statement. Let us pass on and examine the second.

The quantity theory is founded in the first place on observation. It would also appear to be justified on deductive grounds.

Let us first consider the factual observations which suggest it. In our own times these are to be found firstly in the issues of paper money, the results of which have demonstrated, broadly speaking, that increases in the quantity of money are matched by rises in prices, sometimes colossal ones, or in other words by a depreciation of the money. But the quantity theory was well established amongst a large public before the advent of the experiments, all more or less catastrophic, in paper money. It was regarded as an accepted fact that metallic money itself lost its value when the stock of money was increased. As early as the sixteenth century Jean Bodin had stressed the correlation which he perceived to exist between the rise in prices noted by his contemporaries and the introduction in abundant quantities of the precious metals mined in the New World.[1] Similarly, in the middle of the nineteenth century a rise in prices was thought to coincide with an increase in the production of gold due to the discovery of the Californian and Australian goldfields. Then at the end of the century there was a similar coincidence between a new upward movement of prices and an increase in gold production, due mainly to the opening up of the South African mines. We will discuss the value to be attached to these summary observations in a later chapter. But such coincidences, however sweepingly recorded and however open to dispute, are generally accepted, and accordingly count amongst the factors which lend support to the quantity theory.

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[1] *La Réponse de Jean Bodin aux Paradoxes de M. de Malestroict, touchant l'Enchérissement de toutes Choses et le Moyen d'y rémédier*, 1568. As the title of this work indicates, it is a reply to a tract by M. de Malestroict, *Les Paradoxes du Seigneur de Malestroict, Conseiller du Roy et Maistre Ordinaire de ses Comptes, sur le faict des Monnaies présenté à Sa Majesté au Moys de Mars MDLXVI.* The author of this tract maintained that the rise in prices which occurred in his day only appeared to be such; as the value of real money had been progressively lowered, buyers were not parting with more metal by paying more in money of account. This statement was vigorously refuted by Jean Bodin, who did not hesitate to ascribe the rise in prices to the increase in the supply of precious metal owing to the discovery of gold in the New World. Malestroict's remark is certainly worth noting, for in his time and long before it foreign coins circulated in France concurrently with the coins minted by her rulers, and their official prices were fixed according to their content of metal. Any reduction in the weight of fine metal contained in the coins issued by the king must certainly have been taken into account, therefore, and this would tend to make prices rise as the coins were 'increased'. This cannot be the whole explanation, however, if it is true that prices rose more than proportionately to the 'increase' in the money. So it was inevitable that posterity should confirm the opposite thesis propounded by Jean Bodin. It must be noted, however, that the rise in prices appears

It is not necessary to probe into phenomena such as general price variations and their connexion with variations of monetary stocks to find factual evidence which suggests the quantity theory. We need only recall a common experience of everyday life. We have all noticed how on a competitive market, when demand increases whilst supply remains constant, prices tend to rise, and how when the demand is reduced, prices tend to fall. Now, when money is used in an economic system, *increased demand finds expression in an increase in the quantity of money which comes on to the market, and vice versa.* We may say, then, that, all other things being equal, when the quantity of money increases, prices rise, or in other words the value of the money falls, and when the opposite is the case the process is reversed. This observation, put into its more general, abstract form, may be summed up as follows: *all other things being equal, any variation of the quantity of money causes the price level to vary in the same direction, or, in other words, causes the value of the money to vary in the opposite direction.*

When it is formulated in this way the law of supply and demand assumes another name: it is known as the *quantity theory of money.* It also takes on a wider application. For we now visualize the quantity of money as increasing or decreasing not on one isolated market, but on markets as a whole. But it is perhaps the functioning of a competitive market exposed to the fluctuations of supply and demand which affords the simplest and surest evidence of the operation of the quantity theory.

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to have set in before the influx of the precious metals, and that in later periods – notably at the end of the eighteenth century – rises in prices occurred which did not coincide with increases in the supply of precious metals. See G. WIEBE, *Zur Geschichte der Preis-revolution des XVIen und XVIIen Jahrhunderts*; LIAUTEY, *La Hausse des Prix et la Lutte contre la Cherté en France, au XVI^e Siècle*, th. Paris, 1921; H. HAUSER, *La Controverse sur les Monnaies*, 1566-78, in the *Bulletin des Travaux Scientifiques et Historiques*, Section of Social and Economic Science, 1905, 10-31; and PAUL HARSIN, *Les Doctrines monétaires et financières, en France, du XVI^e Siècle au XVIII^e Siècle*, p. 31 *et seq.* The two abovementioned pamphlets by Malestroict and Jean Bodin are reproduced in a recent series entitled *Ecrits notables sur la Monnaie (XVI^e Siècle) de Copernic à Davanzati*, published by J. V. Le Branchu.

§5. The quantity theory and deductive reasoning

Though the quantity theory is suggested by observation, deductive reasoning would seem, at least at first glance, to confirm it and give it mathematical precision. 'Supposing', said David Hume, 'that four-fifths of the money existing in Great Britain is destroyed overnight . . . will not the price of labour and commodities fall in the same proportion?' He goes on to suppose that Britain's stock of money has quintupled overnight and to enunciate the converse proposition. He does not formulate the reasoning on which his statement is based. But there is no doubt about its being mathematical reasoning, which can be easily reconstituted. If, for instance, a certain community has 100,000 units of goods to exchange – which we will assume for the time being to be homogeneous – and if it has a stock of a million monetary units, the average price *resulting from the exchange* of the million monetary units against 100,000 units of goods will be 10 monetary units. If the quantity of money rises to 5 millions, the average price of the unit of goods will rise to 50 units of money; and if the quantity of money is reduced to 200,000 units, the average price will fall to 2 units of money.

By employing an algebraic notation we can, moreover, pass on at once from this example to a general formula. If we call the quantity of money M, the quantity of goods Q and the price P, then $P=\frac{M}{Q}$, or $M=PQ$. If the quantity of money is reduced in any proportion, or in other words divided, let us say, by an unknown number, n, and if we wish to maintain the equality between the two factors of the equation, we can simply say that $\frac{M}{n}=\frac{P}{n}Q$. In the same way, if the quantity of money is multiplied by a coefficient of any kind, we can maintain the equality between the two factors of the equation by multiplying the price by the same coefficient $Mn=(Pn)Q$.

These formulae obviously indicate that transactions covering the same quantity of goods can be effected with a smaller stock of money, provided that the prices are reduced in the same proportion as the quantity of money and vice versa.

It is by an algebraic expression of this kind that Léon Walras claims to have furnished a mathematical demonstration of the quantity theory. 'It was sufficient', he writes, 'to make all the prices *n* times smaller to restore equilibrium with a quantity of the money commodity *n* times smaller. It would similarly have sufficed to make all the prices *n* times larger to restore equilibrium with a quantity of the money commodity *n* times larger. It is certain that: *Any increase in the quantity of money has the effect of increasing or reducing prices in much the same proportion.*'[1]

[1] *Etudes d'Economic politique appliquée*, 1936, p. 98.

Irving Fisher, again, seeks to give the quantity theory mathematical expression by taking, not this time the *stock of money* at one particular moment, but the *money in circulation* over a certain period, which leads him to apply to the stock of money, M, a coefficient, V, representing the average number of times each unit changes hands during the period, or, to use the accepted term, the *velocity of circulation*. He sees fit, moreover, to use separate symbols to designate fiduciary and bank money and their own velocity of circulation, which gives us the celebrated formula $MV+M'V'=PQ$, $P=\frac{MV+M'V'}{Q}$, which claims to express the quantity theory on the assumption that it is M which varies.[1]

Though it is somewhat more complex, this formula lends itself to the same treatment as the previous one.

Does this mean that the quantity theory in the strict sense of variations of the price level proportionate to the quantity of money is mathematically proven as Walras asserts it to be?

It will be remarked in the first place that the evidence of the mathematical reasoning which does beyond doubt illustrate the thought of David Hume, is related to the fact that we are visualizing the quantities of money and goods *exchanged*; if the 100,000 units of goods are exchanged for 1 million units of money, the price will be equal to 10 units of money; if the 100,000 units of goods are exchanged for 5 million units of money, the price will be equal to 50 units of money, and so forth. Irving Fisher, moreover, states quite explicitly that his argument refers to the quantities exchanged. But when we enunciate the quantity theory we visualize a certain quantity of money and a quantity of goods *not exchanged but available for exchange*. In order to substitute the first concept for the second, we should have to consider ourselves entitled to make the quantity of money *available* identical with the quantity of money *expended*, and the quantity of goods *on sale* with the quantity of goods *sold*. In other words, we should have to frame our argument as if the whole quantity of money available was exchanged against the whole quantity of goods on offer. And the foregoing mathematical reasoning does, in fact, *assume that the stock of money, whatever it may be, must necessarily suffice for the exchanges and be entirely absorbed by them.*

Now, this is certainly not what happens on every market where money is exchanged against goods. Only a part of the money, unascertainable *a priori*, is exchanged at each session against a part, likewise unascertainable, of the goods offered. If on one day the supply consists of 100 hectolitres of corn and the quantity of money at the disposal of the bidders is 10,000 francs, and then at the next session the quantity of corn offered is still 100 hectolitres, whilst the quantity of money has risen to 15,000 francs, we cannot conclude from this that the price of the corn will rise from $\frac{10{,}000}{100}=100$, to $\frac{15{,}000}{100}=150$ francs. For it is quite probable that the hectolitre of corn offered at each session will not all be sold, nor all of the 10,000 or 15,000 francs spent. *And it is the same on all the markets.* It can, of course, be observed that the goods produced are destined to be sold in time, and the sums of money to be spent. *But this is by no means to say that all the money available will be exchanged in entirety against all the goods and services available during the same period.*

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[1] See IRVING FISHER, *The Purchasing Power of Money*. The global value of the goods and services exchanged – the aggregate transactions – over a given period is obviously equal to the sum of money which has served to pay for them. Hence we can say that $MV=pq+p'q'+p''q''$, or that $MV=\Sigma pq$, or again, by calling P the weighted average of the terms in p and T or Q the sum of the terms in q, $MV=PQ$, therefore $P=\frac{MV}{Q}$. All this is correct, but it is not the problem of the quantity theory.

Thus the *substitution of concepts* – the substitution of the quantity *exchanged* for the quantity *available* – on which the mathematical demonstration of the quantity theory rests, is not *legitimate.*

But this is not all. It is quite true that it is possible to pay for the same quantity of goods with a reduced or an increased stock of money by reducing or increasing the average price in the same proportion: $M=PQ$; $\frac{M}{n}=\frac{(P)}{(n)}Q$; $Mn=(Pn)Q$. But *the mathematical possibility of an adjustment of this kind in no way implies that a variation of the stock of money will have the same effect from an economic point of view.* Furthermore, it should be observed that *there are other mathematical solutions of the problem which are no less valid,* but which have quite a different significance. Thus, we can just as well say: $\frac{M}{n}=P\,\frac{Q}{n}$; $Mn=P(Qn)$, or again: $\frac{M}{n}=\frac{PQ}{n}$; $Mn=(PQ)n$.

This means that when the quantity of money increases or decreases the equality between the sum of money which facilitates the payments during the period and the value of the transactions effected during the same period *may be achieved quite as well, prices being assumed to remain constant, by a corresponding variation of the quantity of goods, Q, alone, or by a corresponding variation of the product PQ.*

Thus Léon Walras and those who have followed in his footsteps have not given us any mathematical demonstration of the quantity theory. Added to which, we need only apply the most elementary rules of algebra to show that the problem they posit in this way admits of other solutions.

The truth is that the economists, even the mathematicians amongst them, are very often misled by the *way in which the quantity theory is usually presented*, which is *elliptical and fallacious*. The quantity theory is indeed habitually framed in these terms: 'When the quantity of money increases, prices rise, or in other words, its value is reduced, and conversely.' Now, it is self-evident that if the quantity of goods varies in the same direction and in the same proportion at the same moment, nothing is changed in the relation between the one and the other, so that there are no grounds for thinking that the variation which has taken place in the quantity of money must react on the price level. It is obvious, therefore, that the formula given above *implies* this essential proviso: '*the quantity of goods remaining constant*'. But as the proviso is not explicitly stated, it gets forgotten. As we shall see farther on, the inquirer who seeks to test the working of the quantity theory is generally content to consider a curve representing the quantity of money and a curve of prices, as if the evolution of prices only depended on that of the stock of money.

Mathematical formulae such as those of Léon Walras and Irving Fisher certainly possess the advantage of confronting the ratio $\frac{M}{Q}$ with with P, the price; but we have just seen that whilst the mathematicians are careful to omit Q, they incline to the view that it is constant and that the ratio $\frac{M}{Q}$ varies with M alone. This is especially the case with Walras, who, in order to maintain the equality between the two factors of the equation, divides or multiplies both M and P, but never thinks of dividing or multiplying Q.

Now, it is not only mathematical relationships which are involved here; it is also a question of economic reactions. For if the buyers have less money it is to be presumed that many of the sellers – particularly those who have bought to sell again – will prefer to *maintain their prices and reduce the quantities sold* rather than sell at a loss; and if the quantity of money at the disposal of the buyers is increased, many sellers may prefer to increase the quantities they sell rather than raise their prices in proportion; which cannot fail to meet with the approval of the buyers.

The fact is that the assumption that the quantity of goods is constant and only the quantity of money varies may give us a *convenient method of exposition; but we must beware of looking on it as an exact expression of the postulates of the problem.* When the quantity theory is correctly formulated it should in reality be stated in these terms: *when the ratio of the available quantity of money to the supply of goods or services on the market varies, prices tend to vary in the same direction as the ratio.* And if we wish to express this proposition mathematically, we can say: $P=F\frac{(M)}{(Q)}$.

We must realize, moreover, that this formula can equally well express the law of supply and demand in an economy in which the exchanges are carried out through the agency of money. The only difference is that the law of supply and demand applies to one market, whereas the quantity theory refers to an economic community considered as a whole. It is pertinent to inquire, moreover, whether an extrapolation of this kind in the abstract is admissible.

Most of the arguments centring round the quantity theory treat it as if it were a principle established for all time, from which it is legitimate to draw deductions *without inquiring how the supposed relationships between* P *and* $\frac{M}{Q}$ *actually arise.* People who reason like this in the abstract, without forming a clear mental picture of a concrete process of interrelation, are often led to proceed as if *the relationship between money and prices were established outside the actual markets on which the action of supply and demand takes effect.* Lord Keynes himself confesses in his *General Theory of Employment* that he had previously reasoned along these lines, and that it is only in this work that he visualizes the action of money on prices as *spread over the various markets.* As a matter of fact, this idea had long been familiar to certain French economists. It is none the less true that for a long time it was customary to argue as if the ratio between quantity of money and quantity of goods – and services – were established on one vast single market, and often as if it were the money itself which was the object of the supply and the demand.

Léon Walras has expressed this conception with singular lucidity by assuming that the money first intervenes as a 'numerator', that is, simply as an instrument for measuring values, which enables him, by multiplying the quantities of goods to be purchased by the prices, to determine the value of the transactions which the money has to meet, or, to use his own expression, the *desired encashments*; after which the price level would depend on the ratio between the quantity of money necessary and the quantity of money available.

A conception of this kind possesses the advantage of clarity, but it has the major defect of not corresponding to any actuality; for money only performs the role of a common measure of value, of a 'numerator' in the Walrasian sense, when it acts as a medium of exchange, and we do not begin by establishing the amount of the transactions to be effected and then proceed to obtain the money required.

The truth is that the ratio between quantity of money and quantity of goods or services, the variations of which react on prices, is *established on the various markets*; the quantity of money present expresses the amount of *the demand on each market, except on the savings market, where it constitutes, on the contrary, the supply.* If we look at a new quantity of money introduced into an economic community, we must agree that it *will be unequally distributed over the various markets, and that its reaction will also be an unequal one from one market to another.* It is to be presumed, for instance, that the additional supply of money is unlikely to reach those markets, such as the market for bread, on which the demand admits of little expansion. It will consequently not have any *direct* reaction on the price of a product of this kind. Its effects will be felt, on the other hand, on markets where not only the demand but the supply are fairly *elastic*, as in the case of many manufactured products, such as motor-cars. In normal times the increase of the demand does not, unless it outstrips production possibilities, cause prices to rise on a market of this kind; for an increased supply is the response to an increased demand, resulting either from the stocks previously constituted or from a correlative increase of production. The increase in the demand may even, by causing an increase in production, be conducive to technical progress and lead in the end, owing to the reduction of cost prices and the play of competition, to a fall in selling prices.

On the other hand, the flow of money on to the savings markets, where it increases the supply, is liable to conduce to a fall in the rate of interest, and thereby to a lowering of costs. In any case, it may facilitate the efficient employment of the means of production. The introduction of additional money into the economy should therefore be regarded as a factor liable to give rise to a *complex system of actions and interactions on the various markets*, the result of which cannot be forecast *a priori* as a working hypothesis.

Thus, if it is a question of a *slight increase* in the quantity of money, introduced progressively into the economic system, *so that the increase of the demand may be accompanied by a corresponding expansion of the supply*, we should beware of making any *a priori* assertions.

If, however, the *increase* of the stock of money is *so substantial that production can obviously not expand in the same proportion*, as is often the case when *paper money is issued*, we can assume that *the creation of purchasing power without any counterpart will tend to create disequilibrium between demand and supply which will operate in the sense indicated by the quantity theory.*

Here, again, we can take it for granted that the money will be distributed unequally over the different markets, and that the action exercised on each market will be an unequal one. The demand for bread will not increase; and if the demand for motor-cars increases, it will doubtless not lead *directly* to a rise in prices. But the demand for such things as meat, sugar, wines, and spirits will increase and cause a rise in the cost of living; the latter will repercuss on to wages, and the rise in wages will affect the prices of foodstuffs, raw materials, and manufactured products.

When, in short, the quantity theory is regarded, as it often is, as expressing a more or less mechanical action exercised on prices by variations of the quantity of money, independently of the factors which affect supply and demand on the different markets, we must realize that it does not correspond to any actuality.

When, on the contrary, the variations of the quantity of money are regarded as affecting a number of markets and, in sympathy, markets as a whole in a sense consistent with the law of supply and demand, we can admit that it does accord with the facts to the extent that the creation of purchasing power which has no counterpart may lead to a rise, or the withdrawal of a corresponding volume of purchasing power from production to a fall of prices.

To sum up: the quantity theory must be *rejected* as an *abstract principle*. We must accept it, however, though not without modifications and qualifications, as a *synthetic expression* of the influence exerted, *in conformity with the law of supply and demand*, by a change in the quantity of money on the formation of prices.

§6. The effective variations of the ratio between quantity of money and quantity of goods and services

We have just been trying to decide how the problem of the relations which may exist between changes in the ratio of the quantity of money to the quantity of goods – or services – and the price level should be stated. It remains for us to inquire *how variations of the quantity of money placed in circulation in an economic community can come about.*

Let us begin by taking the case of *metallic money*. Here, say, is a community in which at a given moment we find a certain *stock of money* distributed amongst the various representatives of 'economic man', each of whom, when he makes his purchases, puts into circulation over a given period the quantity of money which he has acquired by selling goods or services.[1] When he puts a certain sum of money into circulation, therefore, it is generally because he has supplied an equivalent quantity of goods and services; and if production is properly co-ordinated, he will receive in exchange another, still equivalent quantity of goods or services. As J.-B. Say puts it in his well-known formula, 'products are exchanged for products', without any previous appearance on the scene as a possible factor of disequilibrium, of money, which is simply a medium of exchange.

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[1] Where private persons are concerned, we might say 'the quantity of money corresponding to their incomes'. This conception is explained and discussed later on.

As the exchange between goods or services is, however, no longer an immediate one, a certain length of time elapses between the collection of a sum of money and the expenditure which follows it; and the interval may vary in length during the period under consideration, or in other words the *velocity of circulation* of the money may increase or decrease. If it increases, the *quantity of money put into circulation during the period* – what we have called the *monetary circulation*, as opposed to the *stock of money* considered at any given moment – will have increased likewise; in the reverse case it will have decreased. There may also be alternating periods of hoarding and 'dehoarding', so that for a given production, with a constant stock of money, the demand for goods and services decreases or increases, reacting on prices in a manner consistent with the quantity theory understood in the wider sense which we have accepted here.

But the increase in the velocity of circulation is not brought about only by the holder of a sum of money spontaneously deciding to spend it more quickly than before. The reason for it may also be that the producer, having first increased his production, is offering the goods or services in exchange for which he receives the money, more quickly. Conversely, a reduction of the velocity of circulation may be due not to a spontaneous contraction of the demand, but to the fact that production is slowing down and the supply is consequently falling off.

Hence we can take it as established that up to a certain point *the velocity of the circulation of the money tends to vary with production itself, and that to this extent the variations of the monetary circulation do not affect the level of prices.*

Let us consider now the hypothesis of an *increase of the stock of money itself*, originating either from the production of the gold or silver mines, or from the import of precious metals. The stock of money is increased. The money now introduced into the economic system is thrown into circulation. *It increases the demand, without any immediate increase of the supply*; for money, even metal money, is not an article of consumption to 'economic man'. So long, therefore, as there is no increase in production there will be *disequilibrium* between demand and supply, unless the newly introduced money is saved without being invested, in other words 'hoarded'.

If, however, it goes to the savings market, its introduction into the economy will encourage production, and after having increased the demand for articles of production it may lead, *in a second phase*, to an increase in the supply, thus exercising an influence in the opposite direction from that indicated by the quantity theory.

Let us examine next the case of *fiduciary money*. Let us consider it, for the moment, apart from any issue of money for account of the State.

The issuing bank issues *notes* for the purpose of effecting credit operations, particularly discounting. The sums of money issued in this form are borrowed, which means that they have to be repaid; and according as the repayments are smaller or greater than the amount of the notes originally borrowed, the stock of *fiduciary money* increases or decreases. In any case, it replaces that part of the stock of metallic money which returns to the vaults of the issuing bank, and adds to that distributed amongst the tills of public departments, business enterprises, and private persons.

But is this new addition to the existing stock of money calculated to disturb the equilibrium between supply and demand?

When a bank discounts a bill it gives the drawer a credit which compensates the credit which the drawer has given the drawee. The latter, instead of paying at once for the goods received, keeps his money until the bill matures. The bank's intervention, however, ensures the immediate payment of the sum due to the drawer. By putting the money into circulation for the purpose it has duplicated the sum of money. The quantity of money put into circulation has certainly been increased[1] without a corresponding increase of the quantity of goods offered on the market.

However this may be, when the creation of fiduciary money is called forth by credit operations, principally discounting, the quantity of money thus issued is deemed to vary with the 'requirements of the transactions'. *This does not mean, however, that in this case the demand cannot precede the supply which it stimulates:* whence a possible tendency, *in the beginning*, towards a rise of prices, such as we find in particular in the upward phases of the trade cycle, when the bank's commercial portfolios are swollen and when the issue of notes is increased correlatively.

It is the same with the *bank money* which all the banks, not only the banks of issue, have power to create. *If production expands and its value increases*, the amount of the bills handed in for discounting or for collection over the corresponding period increases in the same proportion, all other things being equal. *There is thus a similar increase of credit balances, or, in other words, of the stock of bank money.* The opposite happens in the converse case. The velocity of circulation may be said to vary in similar conditions, though again the relation between the variations of the stock of bank money and those of its velocity of circulation is somewhat more complex.[1]

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[1] In so far as the credit extended by the discounting banks consists in causing the money deposited by its clients to circulate, the money which is given as credit is an element of the *existing stock of money, only the circulation of which is accelerated.* In so far as the bank creates money to manufacture credit, there is really, in the last analysis, an increase of the stock of money. Where the creation of money by the banks and the well-known formula 'loans make deposits' is concerned, see above, p. 22 *et seq.*, and BERTRAND NOGARO, *Cours d'Economie Politique*, 4th Ed., Vol. 1, p. 495 *et seq.*

We can consequently look on it as established that the creation of bank money, like that of fiduciary money, accompanies – though it may slightly precede – the expansion of production; and as fiduciary money and bank money have for long formed the major part of the total stock of money in the large industrial nations, we can take it that, at periods *when the creation of money for account of the State does not intervene as a disturbing element*, the creation of money by the banks is not liable to upset the equilibrium between demand and supply to any serious extent. We are therefore entitled to assume that the *reaction foreshadowed by the quantity theory has no opportunity to set in with any strength, and that modern money is not very far removed from being neutral money.*[2]

This does not, of course, imply that the creation either of bank money or of fiduciary money has no influence on prices. We have, indeed, just agreed that it is liable at first to exercise an action consistent with the quantity theory; for the expansion of credit precedes that of production. But its appearance is not connected, like that of metallic money, with circumstances of a technical, hence a partly extra-economic character, such as the discovery of new mines or new extraction processes. The creation of bank money as well as of fiduciary money *is called into being by the very persons who direct production.* The initial impetus, therefore, comes from a psychological factor, and the money created is neutral firstly in that *it is now only a passive intermediary.* Furthermore, though its creation gives rise to a demand in the first place, *it also calls up a supply*, which may speedily restore equilibrium; and here again, apart from a series of actions and interactions which may cancel one another out over a period of any duration, it tends to be neutral money.

It is true that the stock of fiduciary money and the stock of bank money were long thought to be dependent on the stock of metallic money. The fact that in most countries notes were for many years convertible into gold, and that on the other hand bank money must in turn be convertible to a certain extent into real money, may have made this thesis appear to have been theoretically arguable. But the issue of fiduciary money and of bank money have long been largely independent of the evolution of the stock of metallic money.[1] And since in most countries notes have ceased to be convertible into metal, the question hardly arises nowadays.

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[1] The reader will find in the annual *Money and Banks*, published by the League of Nations, studies showing the synchronization between the course of production on the one hand and that of the amount of credit balances and the velocity of their rotation on the other hand. Thus, in the years of depression which followed on the crash on the New York Stock Exchange in October 1929, both the stock of bank money and the velocity of its rotation contracted; when the recovery began the latter accelerated; then again the total of credit balances rose, and its velocity of circulation slowed down. Cf. notably *Money and Banks* for 1936, *Survey of the Monetary Situation*, pp. 115-6.

[2] This is an idea which the present author has already propounded on several occasions (see more particularly *Cours d'Economie politique*, Vol. 1, 4th Ed., p. 493), and which has the wholehearted support of JEAN LESCURE in his latest work (see *Principes d'Economie rationnelle*, pp. 126-34 and 275-86).

Hence, in order to form an idea of the circumstances in which the reaction of a variation of the quantity of money on prices can come into operation in such a way as to be clearly evident, we must consider the hypothesis of *an extra-economic factor causing the creation of the money*. This is what happens when fiduciary and bank money are created on a large scale for the financial requirements of the State, more especially during long wars. But even so, it must be added that in such circumstances *the production of goods destined for the consumption and use of private persons is considerably reduced*. As a result prices rise, owing to the disequilibrium between supply and demand, *not only owing to the issue of money tokens which create fictitious incomes, but also because of the growing scarcity of the products offered, which makes it impossible to define a priori the part played by the money factor.*

And the problem becomes still more complicated with the intervention of State direction, which takes us a long way from the hypotheses to which the quantity theory can be related, since prices are then often fixed directly by the public authority.

Up to this stage we have studied the variations of prices as dependent on variations of the ratio of quantity of money to quantity of goods. *But it is possible for the price level to be the independent variable.* This is the case more especially when a drop in the exchange – a fall in the domestic currency relatively to foreign currencies – causes a rise in the prices of imported goods, thence in the average of prices. The same is true when in a managed economy the State decrees or sanctions a rise in the prices of products and services. In these two hypothetical instances the depreciation of the money – which is the reversed expression of the rise in prices – takes place without a *prior* increase of the quantity of money in circulation. Nor would there seem to be anything illogical about this, since, as we have noted above, a general rise of prices can always take place without a correlative increase of the quantity of money put into circulation if there is a compensatory reduction of the quantities of products and services sold. But it should be added that though in these particular cases the increase of the quantity of money does not precede the rise, *it can quite well accompany it*. If there is a general rise in wages the employers may meet it firstly by making more rapid use of the funds at their disposal – an increase of the velocity of circulation – and eventually by resorting to bank credit. Later on the result of the rise in the prices of the goods will be that the cheques issued and the drafts discounted will involve larger amounts. And if we refer to what we said above[1] about the creation of bank money, we shall have no difficulty in realizing that *when the price level rises, the quantity of money corresponding to it is created automatically in modern economic systems.*

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[1] This was so as long ago as the middle of the nineteenth century. It was all the more true at the beginning of the twentieth century. (As regards this point, see the League of Nations annual *Money and Banks*, notably *Commercial Banks*, 1935, p. xi *et seq*.

The nature of these considerations is such as to call for a revision of the conception shared by most economists of the problem of inflation in its relation to monetary depreciation. Even nowadays many economists are not quite awake to the fact that a general rise of prices and monetary depreciation are only two converse expressions of the same monetary phenomenon. Many of them, when confronted with a continued rise of prices such as that which we are witnessing at present in France, think that it will be possible to check it, to avoid growing currency depreciation, if France succeeds in balancing her budget and so obviates the necessity for any issue of money for account of the State. *Now, even if the budget could be absolutely balanced and no money issued for account of the State, it would be impossible to prevent depreciation setting in if it has been decided to raise prices;* for it is the rise in prices which constitutes currency depreciation, and the rise will occur if it has been decided on, *even if no decision has been taken, either previously or at the same time, to increase the quantity of money, for the increase will materialize of its own accord.*

To avoid currency depreciation, then, it is not sufficient to refrain from the issue of money for the requirements of the State. It is also necessary to set aside any measures tending either directly or indirectly towards an increase of prices and so towards measures liable to increase incomes without a correlative increase of production.[2]

§7. Statistical evidence of the relations visualized

The foregoing considerations purport to state the problem of the relations of the ratio of the quantity of money to the quantity of goods and services. They are insufficient to solve it. The relations are indeed complex ones; and after what we have just learned about them we are compelled to differ from the orthodox theorists and to admit that more than one hypothesis is conceivable. It is possible for the variations in the ratio of the quantity of money to the quantity of goods and services to react on the price level in conformity with the law of supply

[1] See Part I, Chap. I, §7.

[2] See the observations made above in connexion with Hungary's monetary policy.

and demand, or in other words in a direction which is consistent with the orthodox theory. They may also be the result of credit operations, in which case the increase of the quantities of money thrown into circulation is destined primarily for the purchase of articles of production, and conversely, so that it is not long before the increase of the demand is followed by an increase of the supply, and vice versa. Finally, the rise in prices, instead of following the increase of the quantity of money relatively to the quantity of goods and services, may be the initial event, which is followed by a correlative increase of the quantity of money put into circulation.

In face of this diversity of conceivable relationships, we should be wise to call in the assistance of factual data, mainly of a statistical order, to complete our elaboration of the theory.

For a long time it was considered sufficient to compare the evolution of prices and that of the quantity of money, or even of the stock of metallic money alone, without taking any account of variations of commodity production. Thus, the *annual variations* of gold production were compared with the *average* annual rate of increase of commodity production. Or again, people were content to say that commodity production had increased with remarkable regularity, whereas at certain times its progression varies more than that of gold.

It is only in quite recent works that we find evidence of a desire to compare variations of prices not only with those of the quantity of money, but with those of the ratio of the quantity of money to the quantity of goods. And even so there is a tendency to confuse the quantity of goods, as Irving Fisher does, with the sum of the transactions. Now, the sum of the transactions represents the quantity of goods *exchanged.* The confusion is understandable in the case of Irving Fisher, who employs without discrimination the notation $P=\frac{M}{Q}$ or the notation $P=\frac{M}{T}$; for his formula refers to the quantities exchanged; *but it is precisely for that reason that it is inadequate.*

What we have to find out is not the quantities of goods exchanged, but the quantities of goods *destined to be exchanged*, that is to say – at least at a first approximation – of the goods *produced.*

But here we encounter another difficulty.

The practice of lumping together under some heading or other quantities of different commodities is the result of very woolly thinking, for which there is no equivalent in statistics; for no common unit exists – even when they are measured by the same physical measures – to which they can be reduced: we can no more add up hectolitres of corn and hectolitres of wine than we can add up carrots and cabbages. We cannot add up the quantities, but only the *values*. And if it is the value of the 'sum of the transactions' which is defined, we are no longer referring to T or Q, but to PT or PQ, so that without being aware of it we are substituting the expression $P=\frac{MV}{PQ}$ or $P=\frac{MV}{PT}$ for $P=\frac{MV}{Q}$ or $P=\frac{MV}{T}$.

Now, the *value of the transactions effected* – PQ or PT – supposing that a reliable assessment of transactions or turnover were to enable us to ascertain it – would not be an index of the quantity of *goods available* for exchange, but would represent the *sum of money which has circulated*, or, in other words, the monetary circulation during the period; for the latter is equal by definition to the total of the payments; and in the sense in which Fisher understands Q or T, denoting, that is, the quantities *exchanged*, it is evident that we get PT=MV.

The statistics which we should have to compare in order to test the working of the quantity theory – setting aside the savings market for the time being – would be the following: on the one hand the average of prices and on the other hand the quantity of goods and services *available* for sale, or *offered*, and the quantity of money *available* for their purchase. Strictly speaking, we should have to know in both cases the quantity available 'at the opening of each market', and then record the market price. A test of the quantity theory would consist, therefore, in testing the working of the law of supply and demand on the different markets. If we attempt to lump them all together we at once come up against a statistical difficulty – the impossibility of reducing different commodities to a common denominator except by value – which incidentally shows what extremely slipshod methods we are employing when we proceed as if we had before us an immense single market where all the goods and services were exchanged against money.

It is true that with this qualification, which concerns the actual statement of the problem, there is a way whereby we can get over the difficulty for the purpose of comparing the *evolution in time* of the prices, the quantity of money and the quantity of goods. We can, in fact, draw up an index of the *physical* variations of production month by month or year by year *for each commodity or service*, and then work out the average of the indices.[1] We can also establish an *index of the values*, amended so as to eliminate the influence of price variations; in other words, an index *weighted* at its base by the values, but only recording, in time, the variations of the quantities.[2] However this may be, it behoves us not to make use of any index without knowing how it is constructed.

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[1] As a matter of fact, the physical variations of production are only directly ascertainable for primary products – industrial raw materials and agricultural products. Where manufacturing production is concerned we have to be content – in the absence of indices of the values – with indirect indices of industrial output.

[2] This is the method adopted notably by WARREN and PEARSON and by CARL SNYDER in the United States. As regards the method of compiling indices of production in constant values, see BERTRAND NOGARO, *Cours d'Economie politique*, Vol. 1, 4th Ed., p. 171.

Having obtained our index we can compare it with an index of the variations of the quantity of money; but here a further difficulty arises: the figure for the quantity of goods produced refers to a certain period, usually a year. The figure for the quantity of money which our statistics give us is, however, not the quantity of money which appears on the various markets during this period; it is the stock existing *at a given moment.* And this is not an adequate index of the quantity of money which flows on to the various markets during the period.

On the other hand, we do know, thanks to statistics – their precision varies according to the country – the total of the *incomes* received during this period, hence the sums of money which the consumers have had it in their power to spend. *Now, the factor which reacts on the formation and evolution of prices is not, as it is still too often imagined to be, the stock of money regarded in the abstract; it is the quantity of money which comes on to the markets.* It would look, therefore, as though it would be of great assistance to us to compare the indices of production with those of incomes. But the latter, besides being based on somewhat rough-and-ready estimates, are only made out for yearly periods, and it is always a ticklish matter to compare data which cover a lengthy period of time, in the course of which the relation between cause and effect may operate in either direction. The total of incomes is approximately equal to the overall value of production: $R=PQ$;[1] and if the increase of PQ comes from P, we may in certain cases attribute the rise of P to an increase of R: as, for instance, in the hypothesis of an issue of money for account of the State, which adds fictitious incomes to the total of existing incomes, and in this way causes an increased demand. But we can also, in other cases, attribute the increase of R to a rise of prices, possibly originating from an exchange loss, and leading to an increase of the quantity of fiduciary or bank money.

Furthermore, it is not only the consumers who *buy*, but also the *heads of enterprises*, and the sums of money thrown into circulation during a certain period are not only those which represent the *incomes* of private persons *during the same period.* Thus, when the baker's customers buy his bread they are *reimbursing* him for his purchases of flour, the wages of his workers, the rent of his shop, the amortization of his capital, and paying him something over, which is his profit. It is quite true, therefore, that the value of the product sold corresponds to the total of the incomes of the people who have participated, directly or indirectly, in production: PQ=R. But the quantity of money put into circulation has been greater than R, for the value of the bread sold represents not only the baker's profit, the wages of his workers, and the rent he pays his landlord; it also reimburses him for his purchases, more especially the price of the flour *which he paid out in the first place*, in the same way as the miller has purchased from the produce exchange corn already bought and paid for by a grain merchant, and so on.

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[1] The total of incomes is only strictly equal to the total value of production when the totals refer to the production actually sold and the incomes *spent* in purchasing it: now, here we are, in principle, concerned with the incomes received, that is to say, available, and not the incomes spent. (When, in fact, the statistics for incomes are obtained by multiplying the quantities of the products by their prices – the method adopted in France to determine agricultural incomes – without making any distinction between what is sold and what is not sold, the estimate is no longer an exact reflection of the incomes received.)

Once the enterprise is working the receipts accruing from the expenditure on the part of the buyers approximately balance his outlay: the baker pays for the flour he buys with the money he gets for his bread, the miller pays for the corn out of the proceeds of the sale of his flour etc.; but to begin with it has been necessary to make an *advance*, the money required for the initial purchases of the enterprise has had to come out of the savings of the head of the enterprise or of a third person, consequently from an *earlier income* – unless the head of the enterprise has, by obtaining credit from a bank, been the cause of the *creation* of fiduciary or bank money.

Thus, the sum of money which circulates during the period is not only the sum which represents the incomes received in the same period. It can be argued, of course, that the savings expended during the period which result from earlier incomes do *roughly offset* the savings formed during the period which will be expended later on. There are, however, *phases* – more particularly the upward periods of the trade cycles – when a larger quantity of money – either the proceeds of saving or the creation of the banks – becomes available for enterprises, and others – notably the downward periods of the trade cycles – when the converse is the case. *And these variations in the quantity of money are not without their effect on prices.* How does this come about? We shall find the answer to this question by examining the problem of the variations of the quantity of money offered on the savings market. But before doing so we must bear in mind that in order to determine the quantity of money available during a given period, it is not sufficient to know the amount of the *incomes which have been formed in the* period.[1]

[1] In the first edition of my book *La Monnaie et les Phénomènes monétaires contemporains*, which was published as long ago as 1924, I said that the reaction of money on prices depended on the amount of the 'incomes of private persons and the working capital of enterprises'. In his book *Monnaie, Prix et Change*, M. AFTALION expatiates very interestingly on this idea that it is incomes which react on prices. I am in agreement with him as to the essentials, particularly as to the necessity for replacing the confused notion of an action exercised in the abstract, as it were, by the variations of the stock of money, by that of an action exercised by the variations of the quantities of money *at the disposal of the buyers*; that is to say, at least where private persons are concerned, by the variations *in their incomes*. It seems to me,

So if, being unable to ascertain the quantity of goods or services and the quantity of money available at the opening of each market and the prices which are established on each, we look to statistics for comprehensive figures for markets as a whole over a given period, we fail to find any index which is completely adequate.

Where *prices* are concerned we have, of course, annual, and even monthly averages, but these only cover a limited number of goods and services.[1]

Where the quantity of goods is concerned we have indices of *production* which we can work on subject to the qualifications just stated, but they do not represent all the quantities offered during the period under consideration, since the number of times the same goods are offered for sale is not shown.

We have indices, of course, relating to the sum of the *transactions*, but they are of little help to us, for fiscal statistics do not cover all the transactions. But they do show the transactions *carried out*, the quantities *exchanged*, and not the quantities *offered*. They are, moreover, statistics expressed in values, not, like the statistics for production, in constant values, but in values *which vary with the prices*. Consequently, we cannot use them as indices of the quantities of goods and services offered; for the reason that $PQ=MV$, they are, on the contrary, indices of the quantity of money which has circulated during the period – in other words, of the *monetary circulation* in the sense indicated above.

But if our object is to ascertain the *quantity of money* representing the *demand* for goods and services during the period, this index is *not an adequate one*, for it tells us the quantity of money *exchanged* during the period, and not the quantity which was present at the opening of each market, only a part of which was destined to be exchanged. Thus we must make do with the statistics for the *stock of money*, but these, too, only give us a *very imperfect index* of the quantity of money available during the period under consideration – since we do not know the average number of times the units of which this stock of money is made up have been standing in readiness to appear on the market during the period. Or again, we must look to the statistics for *incomes*, which,

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however, that we should complete this theory of income by indicating the part played in the determination of prices by the variations of the quantity of money made available to the heads of enterprises for the purpose of creating or developing their enterprises; and this depends on the use made of the savings and on the creation of bank money. At which point we return to the Wicksellian theory.

[1] This means that it is somewhat risky to attempt to read into their variations the expression of a 'general movement of prices'. If, on the other hand, when we worked out the averages we included prices of the most diverse kinds, both wholesale and retail, of goods and services, not all of which are established under the influence of the same factors or at the same time, we might well ask ourselves what an average arrived at in this way would mean.

inasmuch as they refer to incomes *received*, represent the sums which the final purchasers have had it in their power to spend during the period. But we have seen that their interpretation is a tricky matter.

We must consider, finally, the *quantity of money* which, instead of representing the demand on the market for goods and services, represents the *supply on the savings market*. Here, in view of the fact that the money represents the *supply*, an '*increase* of the quantity of money' would appear to denote a *fall* of its price – in other words, of the rate of interest, and vice versa. But the savings market reacts on the other markets: the savings which flow on to it are destined to be invested, that is to say, to purchase articles of production or productive services. *The first reaction exercised on these markets is thus in the direction indicated by the quantity theory.*[1] But an increase of available savings and a lower rate of interest are factors which conduce to an increase of production and a lowering of costs, hence to a *fall in prices, which may manifest itself later on.*

Here, again, the theorist looks to statistics to help him to trace a factor which is the outcome of a whole system of actions and interactions. In order to do so he must begin by making a distinction between the *savings market* properly so-called, which receives the money saved by private persons or enterprises out of their incomes, and what professionals call the *money market*, i.e. the sums of money which the banks have at their disposal, either because they have been deposited with them or because they have created them.

As regards the supply of money normally destined for short-term loans which is created by the banks, fairly satisfactory statistics for these are to be found in the banks' balance sheets. We have not much information, on the other hand, about the supply of money derived from savings, and we know little about its amount except from the sums invested:[2] which means that, here again, what we know is the amount of the completed transaction, of what has been exchanged and not of what has been offered for exchange.

The aggregate result is that all the statistical data we can call upon when we attempt to disentangle the complex relations which exist between prices on the one hand and the ratio of the quantity of money to the quantity of goods and services on the other, are so inadequate that we cannot expect too much help from them in elucidating our problem, for which an analysis based on their findings alone can provide no completely satisfactory solution. So we will content ourselves with the prudent and somewhat circumspect conclusions which result from the analysis we have just made.

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[1] It is this first reaction which is recorded by KNUT WICKSELL, according to whom the action of money in the sense indicated by the quantity theory is exercised essentially through the intermediary of the savings market.

[2] Where transferable securities are concerned, we have statistics for the issues. We have no such information with regard to non-transferable securities. But in countries which possess more detailed statistics of production, it is possible, if we know the *value* of the *articles of production sold* during the period, to obtain, indirectly, an idea of the sums which have been invested. But even so we must often distinguish between that part of the production which has gone into the *maintenance or replacement* of equipment and the part which has served to increase it. For it is the former alone which is the counterpart, as it were, of the savings invested, for saving only begins after the reconstitution of the capital, which is, by definition, a permanent element of the patrimonial estate.

§8. Conclusions regarding the quantity theory

It is clear from the above that, first appearances notwithstanding, we cannot content ourselves with the rigid concept of the quantity theory, which says that variations of the price level are proportionate to those of the stock of money (the quantity of goods being assumed to remain constant). The foregoing analysis reveals, on the contrary, a relationship of interdependence between the various factors, which makes it incumbent upon us to state the problem of the relations between prices and money in very different terms. It remains for us to inquire, however, whether in this complex of actions and interactions there may not possibly be a *dominant tendency* which would warrant a less rigorous concept of the quantity theory.

As we have seen, this theory is suggested by the observation of various phenomena which, though recorded in a rough-and-ready manner, cannot be dismissed out of hand: certain spectacular 'inflation' phenomena of recent years, certain spectacular price movements, the existence, observable day by day, of a relationship between the variations in the quantity of money and prices on all the world markets. We will examine in a later chapter the outstanding facts of monetary history which are adduced in support of the quantity theory; for the present we will confine ourselves to the question of how the problem which we have just defined can be logically stated, assuming that it is the quantity of money which is the first to vary.

The procedure usually adopted consists of applying the law of supply and demand, as it were, to the money itself, and arguing as if it were the money which was the object of the supply and the demand. Having made the distinction described above between the two categories of exchange relationships – the exchange ratios between the commodities (or services) and the exchange ratios between each commodity (or service) and money – implied in the scale of prices, the second category is set aside. The argument is framed as if, the exchanges having been concluded, it then became necessary to obtain the means of exchange, as one might look round for a means of transport. The reasoning is clear, but it explains nothing, for it does not accord with the facts: money is itself the medium of exchange, and cannot be the object of the supply and the demand.[1]

Some writers attempt to keep nearer to reality by arguing that money is more or less desired as people prefer to acquire goods with it or to retain the purchasing power which it represents. In periods of intense activity, they say, people who have money are eager to buy goods, particularly manufactured goods, and at such times there is an inflow of money on to the markets and prices rise. In periods of depression everyone prefers to keep his cash, and the money flows back into private cash-boxes and to the banks. 'The desired cash reserves are increased', they say, 'money is in greater demand, and prices fall.'[2] This observation is in its way an expression of fact, but the essential problem of the influence of variations in the quantity of money cannot be stated in this way. *Outside the money market and the savings market,*[3] *where money is the object of loan transactions, it is no more in demand as purchasing power than as a medium of exchange.* John Stuart Mill's assertion notwithstanding, it is not true that a person who offers goods 'demands' money; here the money, precisely because it stands for the undifferentiated service represented by purchasing power, is not 'demanded', but only accepted in undefined quantities. And when it is asserted that money is more or less *desired* as available purchasing power, this is placing a somewhat arbitrary interpretation on the fact that people who possess cash are more or less inclined at different periods to make use of it or to entrust it to third persons – which tends to augment or curtail the quantity of money in circulation. But this is only one aspect amongst others of the problem of the action which may be exercised by the variations of the quantity of money on the evolution of prices . . . and production; and it is always necessary to inquire whether the action is a simple and unequivocal one, as the traditional theory assumes, or whether on the contrary it is a complex combination of actions and interactions.

Other writers, indeed, though they do not argue as if money itself is the object of supply and demand, reason as if money took shape on one vast single market, the prices on which vary as the global ratio between production as a whole, which is on offer, and the mass of available money, which 'demands'. But neither does any vast single market of this kind exist. *When a supply of new money is distributed over the economic system it reaches different markets, which react in different ways.* We must seek to find out, then, how new money comes into circulation and how it reacts on the various markets.

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[1] Except in foreign exchange operations, but in this case one currency is in demand in exchange for another currency.

[2] The expression 'desired cash reserves' emanates from Léon Walras. But the same position has been maintained, with variants, by various authors, notably by CARL MENGER (in his article entitled *Geld* in the *Handwörterbuch der Staatsw.*), KNUT WICKSELL (*Interest and Prices*), T. N. CARVER (Econ. Journal, 1934). On this point, see CH. RIST, op. cit., p. 357 *et seq.* See also VON MISES, op. cit., Part II.

[3] As these terms are generally understood, the savings or capital market is the market on which money resulting from saving is offered, and the money market is the one on which the banks offer the funds originating from deposits and from the money created by them.

The way in which it is put into circulation depends on how it originates. Nowadays, when it is a question of fiduciary or bank money created for the requirements of the State, this represents new purchasing power over and above that already held by private persons – income and liquid capital – which competes with the private demand on the consumer markets. If it is fiduciary or bank money created by the banks as credit, the purchasing power which it represents goes first of all to enterprises in course of formation or expansion, more especially to enable them to purchase the equipment they require, and it is only after it has been transferred to the producers of the equipment that it reaches the consumer markets. If it is metallic money created by the producers of precious metal, most of it goes into the vaults of the issuing institutions, and the resulting increase in the metallic reserve is expressed principally in an increased *power of issue*, which is incidentally made use of in varying degrees by the banks.

Thus, except in cases where the State creates money intended to increase its purchasing power without effecting a corresponding reduction in that of the general public, *the creation of new money in a present-day community is expressed firstly by an expansion of credit and a lowered rate of interest, and consequently by an increase in the means of production.* And if the new money introduced into the economy is distributed over the various markets it affects them in very different ways according to individual circumstances; for *the sensitivity of markets to the action of supply and demand varies considerably.* Where the products of primary wealth (foodstuffs and raw materials) are concerned, an increase in the quantity of money on offer will lead, if the demand does not increase at once in proportion, to at least a temporary rise in prices, but on the markets for manufactured goods this is not so;[1] in this case the enhanced demand may even, by causing an increase of production and by enabling technical processes to be perfected, thereby tending to bring down manufacturing costs, result before very long in a fall in selling prices. It is only when, after prolonged inflation, there is a rise in raw materials and food prices, with a consequent increase in wages, that the prices of manufactured goods rise in their turn.

Hence, the introduction into an economic system of a certain quantity of additional money over a specified period would appear to give rise to a *complex system of actions and interactions.* It does certainly tend to increase *demand,* but it may also help to increase *supply.* A reduction in the supply of money would set up a similar set of actions and interactions; and in either case *it is hardly possible a priori to forecast the result.*

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[1] See BERTRAND NOGARO, *Principes de Théorie économique*, p. 143, or *Cours d'Economie politique*, Vol. 1, p. 330.

When, however, instead of visualizing a moderate inflow of money into the economy, we come to deal with an overwhelming issue of fiduciary money, the problem is altered. For *there are limits to the expansion of production in a given period of time, whereas there are no limits to the creation of paper money.* Disequilibrium consequently tends to arise between the supply of and the demand for goods or services, and the result is a rise in prices; or, in other words, a reduction of the purchasing power of the money.

We may sum up by saying that if we wish to give the facts of observation which underlie the quantity theory their correct interpretation, we must be on our guard from the outset against applying the law of supply and demand in the abstract to money, and of making the mistake of regarding money as if it were itself the object of the supply and the demand on a special market superimposed, as it were, on the other markets.

We must beware, too, of arguing as if the ebb and flow of money occurred on one vast single market, where it reacted only on the demand for goods and services, where it had of necessity to suffice for all the exchanges and be absorbed by them, and where the price level was determined by the ratio between the quantity of money and the quantity of goods and services.

We should, on the contrary, take example by Cantillon, and consider money as distributed over the whole economy, where some proportion of it may remain unemployed, and where as it circulates it exercises a combination of complex actions and reactions on the various markets, not only on demand, but on supply as well.

Having made these qualifications, we are led to the conclusion that the *quantity theory* – setting aside the rigid formula whereby prices vary proportionately to the quantity of money – *holds good in so far as the action exercised over the demand for goods and services by variations of the quantity of money available over a certain period is greater than the action which it has on production,* and therefore on the supply over the same period.

Thus conceived, we can apply it to certain phenomena of large-scale 'inflation', albeit these are much more complex than a summary study of the subject would make them appear.

On the other hand, it looks as though we cannot endorse the conclusion all too often arrived at by deductive reasoning, *that it can be applied to any variation, however large or small, in the quantity of money.* In the case of smaller variations it is wiser, therefore, to refrain from pronouncing an *a priori* judgment.

CHAPTER III

THE POSITIVE THEORY OF MONEY

§1. The interpretation of monetary phenomena and the theory of money

In the eyes of the French reformers of the end of the eighteenth and the beginning of the nineteenth century the lesson to be learned from the long monetary history of the *ancien régime* was that it was useless to attempt to fix the prices of coins, and their intention in instituting a system of free coinage, with a monetary unit defined for all time by a specified weight of fine metal, was to allow the prices to fix themselves. They realized very clearly, moreover, that the establishment of bimetallism conflicted with their own principles: if gold and silver were two commodities, the rate of which was freely established, how could they preserve an invariable exchange ratio one to another? And how, in these circumstances, could *both at the same time* determine the value of the monetary unit? Accordingly, when it was found that each metal in turn rose to a premium over the other, and that in bimetallist countries it was necessary to check first a drain of silver coin and then a drain of gold coin from abroad, no surprise was felt. Gold and silver were two separate commodities, and it was only natural that the value of each should evolve with the respective quantities offered.

Nor did the suspension of bimetallism come as a surprise to economists who had remained faithful to the doctrine which had inspired its promoters. And the depreciation which followed was explained in the same way by the superabundance of silver. As we have seen, an attempt had been made to remedy the depreciation of silver in India by systematically restricting the silver coin circulating there. And as the desired result was achieved after a few years, the theory behind the reform appeared to be confirmed. Thus the evolution of the metallic currency systems during the nineteenth century seemed to have been satisfactorily explained by the orthodox theory contained in the two essential propositions that 'money is a commodity, and its value varies inversely to its quantity'.

It was fully corroborated for many years by the results of the experiments made in the issue of paper money. During the French Revolution the value of the assignats varied for a long time with the hope of their conversion into the national property, and as the hope died away it dwindled to nothing, while the issues multiplied. The value of the assignats thus appears to have been linked up with the possibility of the conversion of the money tokens into commodity money.

The rate of the paper money put into circulation in the United States during the Civil War likewise fluctuated with the prospects of a resumption of cash payments, hence with the mere announcement of new paper issues.

As for the paper money which had circulated in Great Britain between 1797 and 1820 as a forced currency, Ricardo had supplied an interpretation of the loss on the notes relatively to gold which was strictly consistent with the quantity theory and dominated the whole theory of depreciation up to the very end of the nineteenth century if not beyond it: the fact that the notes had been issued in greater quantities because the Bank no longer had to redeem them in cash had caused them to lose their value, and the loss of value was expressed at once by the premium on gold and by the rise in internal prices. Later on the exchange loss generally experienced in countries with paper currencies continued to be explained in accordance with the currently accepted doctrine as due to 'depreciation' caused by the superabundance of the paper money. When eventually, during and after the 1914-1918 war, abnormally large note issues were accompanied by an exchange loss and a general rise in price in many countries with inconvertible paper-currency systems, the coexistence of pronounced inflation and an internal and external depreciation of the paper money seemed to bring with it new and striking confirmation of the traditional theory.

When we look into the matter more closely, however, we see that the part it plays in the interpretation of these monetary phenomena is a much less important one than this. Where the assignats and the greenbacks are concerned, the idea of commodity money and the quantity theory do, of course, give us some of the essential data we need for their interpretation, though we must beware of construing even these classic cases as purely and simply applications of the quantity theory. But where firstly the phenomena linked with the functioning of metallic-currency systems are concerned, we have found the traditional interpretation to be based on a series of misconceptions. Though the *ancien régime* did not succeed in fixing the prices of coins and was signally unsuccessful in fixing the ratio between gold and silver coins, it was not because the coins had a 'commercial' rate which differed from the purchase prices of the mints and the legal tariffs, but because the purchase prices and the official prices – and with them the legal ratio between the two metals – varied from country to country, and changed fairly frequently inside the same country. With the institution of the system of free coinage and the defining of the monetary unit for all time by a specified weight of metal, with the adoption by many countries of the bimetallist régime and the same ratio between the two metals, the 'commercial' rate of the precious metals was determined by the legally fixed purchase price of each in the monetary units of the bimetallist countries and by the possibility both of disposing of any available surpluses in such countries and of calling on their stocks of silver or gold to make up any deficiency in market supplies.

It is evident, then, that gold and silver are not commodities in the sense given them by the quantity theory. Their ratio of value inside the bimetallist countries was determined by the legal ratio, and the commercial rate on the free market, even outside the bimetallist countries, only diverged from the rate corresponding to the legal ratio within the narrow limits constituted by the transport of the two metals in either direction, i.e. by a gold point and a silver point, plus certain minor charges for conversion. *Even at this early stage the theory of exchange begins to take its place in the general theory of money.*

It was, moreover, as we saw earlier, the disappearance of this stabilizing mechanism, and not the superabundance of silver, which led to its depreciation. As for the operation which finally led to the readjustment of the rate of the rupee and its stabilization, this has nothing to do with the quantity theory. What the Indian Government did was not so much to suppress the coinage of the rupee as to suppress *freedom of coinage*, and by so doing to eliminate an unstable and declining silver import point. They also succeeded in resuming the coinage of rupees without endangering the recovery of their exchange; and its eventual stabilization at the desired rate was obviously not achieved by a miraculous feat of equilibrium consisting in keeping the quantity of money strictly proportioned to requirements: it was simply the result of the establishment of a gold import point and a gold export point. Here the traditional theory ceases to help us to interpret the phenomena before us, and the interpretation is once more to be sought in the theory of exchange, which becomes more and more closely interwoven with the general theory of money.

The same is true of most of the cases of monetary depreciation affecting paper-currency systems. Even the premium on gold quoted in England in Ricardo's time took the form mainly of an exchange loss resulting from the forced currency, the disappearance, that is, of the normal gold points. It was the same in most of the countries with inconvertible paper-currency systems during, and particularly at the end of, the nineteenth century. The price level in these countries was very often low, and the depreciation which is alleged to have been the cause of the exchange loss really consisted entirely in the exchange loss itself, which was related to the absence of the gold points and the fluctuations of the balance of payments.

When we come down to the great monetary crisis which accompanied and followed the 1914-1918 war, we do indeed witness the advent, mostly at the same time, of inflation, exchange loss and rising prices; but this by no means implies that the sequence of events always fitted in with the traditional concept. We have already seen that in Germany, after the middle of 1921, it was obviously the exchange loss which led to the rise in prices, and the note issues lagged far behind. In the phase immediately prior to this the Czechoslovakian crown had followed a course parallel to that of the German mark, and prices had risen as a result of the exchange loss, notwithstanding a policy of rigorous deflation. When the facts are examined more closely, therefore, it would seem that the quantity theory is incapable of giving us our explanation, and that we must seek it in a reconstructed theory of exchange.

When, finally, we are confronted with the monetary events of today the traditional theory proves to be totally inadequate to throw any light on them. It had already shown itself powerless to explain why, at the end of the nineteenth century, the Austrian crown and the Spanish peseta, which were inconvertible into gold, were still worth more than their weight in silver. *Here, again, the explanation derives from the theory of exchange.* We shall find the same thing when we come to interpret the constitution of stable paper-currency systems and the formation of interrelated monetary blocs without any metallic basis. This set of phenomena is quite unintelligible in the light of the quantity theory. *Consequently, if we wish to interpret the functioning of monetary systems correctly, we must elaborate a new theory in which the theory of exchange plays a prominent part.*

§2. The nature of money and the value of money

At the beginning of this book we pointed out the inadvisability of giving a complete definition of money until we were competent to express an opinion on the nature of money, and at that stage we confined ourselves to defining it by its functions. The critical study of the concept of commodity money contained in the previous chapter makes it possible for us to set out our final conclusions as to the nature of money: money was, of course, *originally* a commodity, that is to say, an asset which had its own usefulness apart from its monetary function; but at a certain point in its sociological evolution it ceased to be necessarily a commodity. Thus it is *not essentially* a commodity. We will therefore eliminate the commodity aspect from its definition, which can be formulated as follows:

Money is an asset sui generis, which serves as a medium of exchange and thereby performs the functions of a common measure of value, a medium of payment and an accumulator of value.

It may be a commodity, an asset, that is, which has a use of its own independent of its monetary functions, and whose quantity is defined by a physical unit such as a specified weight of metal.

It may also be a token representing the unit of account which originally corresponded to a unit of commodity money. This representative token may be a concrete one (real fiduciary money such as a paper note) or an abstract one (bank money).

When money is defined in this way we should not expect its *value* to be established like that of any ordinary commodity; in the first place because even when it is a commodity its privileged function as a medium of exchange makes it cease to be an ordinary commodity; and secondly because it is possible for money not to be a commodity.

By the value of money we understand here not the value of one monetary unit relatively to another monetary unit – that is, a question of exchange – but the value of a monetary unit – or a sum of monetary units – in relation to goods and services as a whole. Now, as we have seen above,[1] the value of money as thus defined is the converse of the average of prices, and it varies inversely to this average. If, for instance, a stock of goods is worth 100 francs in year A, 200 francs in year B, and 300 francs in year C, the value of the franc relatively to the total quantity of goods will move from $\frac{1}{100}$ to $\frac{1}{200}$, and then to $\frac{1}{300}$.

As the value of the monetary unit relatively to a commodity is only the expression of the price reversed, it might be inferred that the study of the value of money is the same thing as the study of prices, and that the problem of the value of money is synonymous with that of exchange values in general. Certainly, if we wish to study the value of money we must first acquaint ourselves with the general theories of prices and values. But whereas a study of this kind is generally approached from the angle of the commodity, we must tackle it here from the angle of the money.

Most of the theories of prices and values start by assuming not a barter transaction, but an exchange of money against goods. In a barter transaction there are two supplies and two demands, for each commodity is offered as such and is sought for its own sake; there are also two prices, because the commodity which is in demand is paid for with the commodity offered: thus when 200 hectolitres of oats are exchanged against 100 hectolitres of corn, every hectolitre of corn may be said to be paid for with 2 hectolitres of oats, or every hectolitre of oats with half a hectolitre of corn: 2 is the price of the corn in oats, and half is the price of the oats in corn. Assuming an exchange of corn for monetary units, it is only the corn which is in demand and on offer; the money itself is not 'demanded', but accepted; the price is paid in money. The theory of value generally presupposes circumstances in which the commodity, and the commodity alone, is in demand and on offer. It takes account of its use-value to the buyer and its cost to the seller. Its analysis overlooks the money, which has up to now appeared to play a passive role.

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[1] See above, p. 158.

When the money is itself a commodity, however, when its production has entailed labour and expense; in other words, when it has a cost, the cost must be taken into account, too. It is generally asserted by classical writers, moreover, that the value of money, which they always regard as a commodity, is fixed like that of other commodities.

But the problem is not so simple as that: we must remember that a commodity which has become money has thereby acquired an unlimited market, and this circumstance is liable to react on its exchange value. And if a régime of weighed money has been replaced by one of coined money, and it is accepted for free coinage, it commands not only an unlimited market, but a market at a fixed price, since the producer knows that in exchange for a definite weight of fine metal he is certain to get a definite number of monetary units. Therefore, if the cost of production falls, competition amongst producers is powerless to alter the purchase price, which corresponds to the actual definition of the monetary unit deemed to be equal to a certain weight of metal. If, on the contrary, the cost of production rises – which it can only be assumed to do in exceptional cases, as technical progress tends to lower it – the producer of the precious metal cannot get a higher price for it, for that would mean that he would get back more metal, in the shape of coined money, than he had handed in, and the only course open to him is to refrain from selling.

As regards the reaction of an increase or a reduction in the supply of precious metal on the exchange ratio between the coin obtained from it and commodities as a whole, we should expect this to be generally slight and slow to take effect, because the purchases made by the producers of the metal with the new coins minted from the bullion they have handed in to the mints as a rule represent only a very small proportion of the aggregate purchases made by all the holders of money, metallic or otherwise, over a given period.

It is, however, through the springing up of new demand on the various markets that money can exert an action on the formation of the exchange ratios, whose evolution, regarded as a whole, denotes both a movement of prices and a variation of the value of the money itself. And if the new demand is not accompanied by an increase of production in general, we may say, with the qualifications mentioned in our discussion of the quantity theory, that the exchange ratios between money and goods will vary according to the pace of the production of the precious metals.

When money is not a commodity, when it is fiduciary or bank money, the problem has to be stated in slightly different terms. As long as the money is effectively *convertible*, even in internal exchanges, unit for unit into metallic money, the value of such non-commodity money is *identical with that of commodity money, though it is not without a reaction on the latter, because it increases to some extent the total stock of money.*

If the *fiduciary money*, then the bank money, are declared to be forced currencies and thus become *autonomous currencies*, the *starting-point* of their exchange values relatively to goods and services is *the value of the metallic money* which they previously represented unit for unit. Lastly, when the fiduciary money at once takes the shape of inconvertible notes, the problem is not appreciably different, as the inconvertible notes represent a certain number of monetary units which had previously been incorporated in metallic money.

The value of the monetary unit represented by the fiduciary and bank money may subsequently *become dissociated* from that of the unit of metallic money. This is particularly liable to happen when the two currencies circulate side by side (it was the case at first with the assignats), or when contracts can be concluded in either currency (as in the case of the greenbacks). The premium paid to have the paper money turned into metal exactly expresses the difference in value between the two kinds of money. And we find, as we have seen, that the premium is often increased by reason of the multiplication of the fiduciary money: but this is not caused by the increase in its quantity alone: it may also be the result of factors which attract or discourage speculation, particularly the remoteness or imminence of a resumption of the convertibility of the fiduciary money into metal.

When the metallic money ceases to circulate concurrently with the paper money, and when the metallic money is not currently employed as contract money in internal transactions, the evolution of the value of the fiduciary money, which has now become autonomous, ceases to manifest itself in the form of an agio between the two currencies; it is expressed by a *movement of prices*, which may be quite different from what it would have been had the monetary unit continued to be incorporated in metallic money. We sometimes witness rises in prices which are out of all proportion to any which can occur under a régime of metallic money; these represent *an internal depreciation* of the money concerned.

A rise of this kind generally sets in where there is large-scale 'inflation', when, that is to say, the gratuitous money which is what fiduciary money really is, is issued in quite abnormal quantities, and this would seem to be one of the most obvious instances where the quantity theory would legitimately apply. Purchasing power which is created without any counterpart, which goes mostly to the State without any compensatory reduction of the purchasing power of the public, must indeed inevitably lead to disequilibrium in the ratio between supply and demand on the majority of markets; and though it is true that there are some markets which are in general insensitive to variations of this ratio, the underlying solidarity between the markets must in the long run involve them all in an upward movement, which is exactly what happens when money depreciates. Here the depreciation can legitimately be ascribed to the development of artificial purchasing power caused by the multiplication of the notes. We note, however, that the increase in purchasing power is not proportionate to the number of monetary units created; thus the last milliards of assignats did not add substantially to the purchasing power already in existence, by the very fact of the vast depreciation already suffered by the paper livre.

It must be observed, however, that abnormally large issues of paper money occur chiefly in times of war or revolution, in periods, that is, when production tends to be restricted and transport costly, so that the rise in prices registered at such times cannot be attributed solely to the increased demand, but partly to the scarcity of supplies and the rise in certain costs.

On the other hand we must take account of the fact that a régime of inconvertible paper money is normally accompanied by an exchange loss as against other currencies which are still stable. Now, the exchange loss, which hits importers, but is of advantage to exporters who are sellers of foreign bills, pushes up the price of imported products and may also contribute to the rise in export products;[1] it therefore reacts in an upward direction on the general price level. In cases of extreme depreciation – as in Germany in 1923 – even home-produced goods may be quoted in a foreign currency – with the result that their prices rise automatically with the exchange loss. We have seen that in such cases the inflation follows rather than precedes the depreciation of the money.

Thus, once fiduciary money has become dissociated from metallic money, its value ceases to be determined solely by the variations of its quantity and the disequilibrium between the supply of and the demand for goods to which the creation in excessive quantities of gratuitous money is apt to lead. *It is still true none the less that its evolution can be very different from that of metallic money*, and this explains why orthodox political economists long refused to admit that paper money was capable of forming the basis of an ordered monetary system and of acting as a satisfactory standard.

But we have also seen how in a quite recent phase of the evolution of money, perfectly rational monetary systems have been set up from which metallic money was absent, despite which the *value* of the monetary unit relatively to goods and services as a whole *did not vary any more than it does in systems based on metal.* Germany's monetary system after the adoption of exchange control was a case in point.

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[1] As regards this point, see BERTRAND NOGARO, *Cours d'Economie politique*, 4th Ed., Vol. II, p. 343 and p. 384 *et seq.*

Furthermore, though it is true that the creation of fiduciary money, which is non-commodity money, arbitrarily created, enables the State to increase its stock of money at will and so to create a state of disequilibrium between the demand for and the supply of goods which is liable to affect the value of the money in the sense suggested by the quantity theory, it must be added that the power of creating money to suit the requirements of production can, on the contrary, constitute an equalizing factor liable to prevent the operation of the quantity theory.

We have seen that *the problem of the value of money is the problem of the formation of prices* regarded not from the standpoint of the goods, which is the habitual method of explaining the theory of prices or the general theory of value, but from *the standpoint of money.* It is the same problem, but *we cease to regard money as a passive factor and seek instead to find out how it reacts on the formation of prices*; an orthodox, somewhat oversimplified theory tends to trace this action back to the quantity of the money. We have just seen that the influences at work are really much more complex ones, but that, particularly in the case of fiduciary money, the variations of the quantity of money issued can – with the qualifications referred to in the preceding chapter – exert an influence on the formation of prices which is consistent with the quantity theory. But if the theory is to apply, variations must take place in the quantity of money which do not correspond to the variations of the quantity of goods produced; so that we are led to inquire whether, apart from abnormally large issues of money by the State for its own requirements, the banks' power to create fiduciary and bank money does not rather tend to bring the monetary circulation into step with the development of production.

As long as we are dealing with *metallic* money an increase in the stock of money due to the discovery of gold or silver deposits and improved methods of extraction has no direct bearing on the development of production in general. Consequently, the one may precede the other, thereby rendering the stock of money excessive or inadequate, which presents us with a situation which allows the quantity theory to come into operation. It is true that if we take a leaf out of Irving Fisher's book and compare production over a given period with the quantity of money put into circulation during the same period, we have to take into account not only the stock of money, but its velocity of circulation; now an increase in production, or of the 'exchanges to be effected', tends to speed up the velocity of circulation of the stock of money, and vice versa.

Conversely, too, an increase in the stock of money may, by facilitating saving, encourage the expansion of production, and vice versa.

To put it differently, there are even in this case factors which tend to adapt the monetary circulation to the requirements of the exchanges – factors of adaptation which are ignored by the quantity theory, but which must not be left out of our calculations.

When the money is *fiduciary and bank money* created and set in motion by the banks, the tendency towards a *simultaneous expansion* of production and of the media of exchange is still more marked. The sums of money created by the banks for their credit operations must, of course, be repaid; but the quantity of money put into circulation by the banks increases or decreases according as repayments of borrowings overcompensate or undercompensate new loans. Now, the banks are generally asked to create credit, that is, to put more money into circulation, when it is desired to expand production, especially in the cyclical boom periods; whilst the additional money put into circulation tends to be reabsorbed in periods of depression. Thus, *the issue of fiduciary or bank money, which in our own times has become more and more independent of metallic reserves, gives the stock of money as a whole an elasticity which enables it to follow more closely the development of production itself.* In this way modern money tends to become neutral money, in the sense that it reacts less and less on the formation of prices.

Any creation of money, however, creates a momentary disequilibrium between demand and supply by placing on the market purchasing power which does not originate from previous sales. The periods when the banks by expanding credit place new purchasing power at the disposal of enterprises which are in course of formation or expansion are periods when certain prices, particularly those of raw materials, and often of labour, tend to rise, thus reacting to some extent on other prices. Periods when credit is contracted or part of the money previously issued withdrawn from circulation are on the contrary periods when prices tend downward. So it is still true that despite its elasticity modern money itself contributes in a certain measure by the variations in its quantity to the evolution of the price level which is the reversed expression of that of its own value.

§3. Money and general price movements

What are known as general price movements – that is to say, the variations in the average level of prices – are generally considered to be an essentially monetary phenomenon. A passage from a work by Ch. Gide sets out with great lucidity the viewpoint of traditional political economy. 'Let us suppose', he says, 'that we have before us a carefully prepared list showing the prices of all the different commodities. . . . Let us imagine that ten or a hundred years later a new list is drawn up, and when we compare the new list with the old one we find that all prices, *without exception*, have increased by 50 per cent; we can say in this case that the value of money has really fallen by 33 per cent, since, as everything which used to cost 2 francs now costs 3, 3 francs are now only worth 2, so that the cash has lost a third of its value.

'And on what grounds are we entitled to draw this conclusion?

'They are these: a phenomenon such as an all-round uniform rise in prices only admits of two explanations: either the facts are what they seem, and all the commodities have described a general and identical upward movement, or else only one thing, the money, has moved downward, nothing having changed in the value of the other commodities.

'Which of these two explanations are we to choose? Common sense tells us at once that there is only one answer. . . .'[1]

The writer recognizes, however, that we never find a general uniform rise in prices. 'As the value of each item', he says, 'varies through causes peculiar to itself, we shall find that some prices have risen in very varying proportions, while others have remained stationary and others have even fallen. If however,' he concludes, 'by making the appropriate calculations we can discover a general average, say a rise of 10 per cent, the average can only be explained, for the same reasons as those previously set out, by an equivalent converse loss in the value of the cash.'

Firstly, it will be remarked that the problem is incorrectly stated. Employing the terminology habitual to most of the classical economists, Gide inquires whether it is the value of the goods which has increased or that of the money which has declined. Now, we are dealing here with an exchange ratio: the exchange value of the goods relatively to the money cannot rise without the exchange value of the money relatively to the goods falling correlatively and proportionately. A rise in the value of the goods is synonymous with a fall in the value of the money, and no problem is solved by saying that 'it is the value of the money which has declined'. What the writer means is that the change in the exchange ratio is attributable to money. And indeed, if we assume, as he starts by doing, that the exchange ratios between the goods themselves are unchanged, and that their exchange ratios relatively to money have consequently varied in equal proportion, it is difficult, as Gide says, to imagine 'a cause capable of sending up at the same time and in the same proportion the prices of silk and coal, corn and diamonds, lace and wine, land and labour, and all the other objects which have no common link'. Only the money exchanged at one time for all these different commodities could have been the cause of so uniform a variation.

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[1] *Principes d'Economie Politique*, 7th Ed., p. 96.

But Gide himself admits that no such phenomenon occurs in reality. Prices never vary all at the same time, all in the same direction and all in the same proportion, so that all the exchange ratios remain unchanged except the ratio between goods and money. This being so, the same arguments, when used by Gide to show, on the contrary, that all variations of the price level are attributable to money, lose much of their weight.

For variations in prices, whatever their extent, always result, unless they completely neutralize one another, in a change in the average level; and all so-called general rises or falls are average rises or falls. It is true that at certain times the number of the prices which rise is much greater than that of the prices which fall, and vice versa. But the onesidedness of the rise or the fall is explained by the closeness of the links which bind almost all the markets together. And we have already rejected the argument[1] that a rise on some markets entails a compensatory fall on the others if there is no variation in the quantity of money.

Hence a general movement of prices does not necessarily originate with money, and it is not necessarily in the nature of a monetary phenomenon. But we have seen that money can nevertheless give rise to a more or less general variation of prices, either as the result of exchange operations or because of a change in its quantity. And this is sufficient to give us cause to inquire how far price movements may be attributed to the money factor.

The money factor does indisputably play a predominant role in the hypothesis of the overissue of paper money. But the price movements which are generally visualized in this connexion are movements observed in countries which have a normal currency, a normal currency having until quite recently meant in practice a metallic-currency system, and the only factor usually taken into consideration is the stock of metallic money, the stock of money as a whole being deemed to vary as the metallic element, principally gold.[2]

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[1] See above, p. 144 *et seq.*

[2] In conformity with the Ricardian theory of the distribution of the precious metals, the process is held to be the following: The production of the precious metal begins by causing prices to rise in the region of the mine, and then over the whole of the producer country, and the rise stimulates the export of the metal. When it is imported into other countries it causes prices to rise there. It is in this way that a powerful increase of world gold stocks makes prices tend to rise all over the world. A downward tendency occurs, on the other hand, when the pace of gold production slackens. A discussion on this supposed process – a rise of prices at the mine, creeping like a spot of oil into all the other countries – by the present author, written as the result of an investigation into the gold-mines of Western Australia, will be found in *La Monnaie et les Phénomènes monétaires contemporains*, 2nd Ed., p. 237 *et seq.*

In order to discover the part played by the money factor in price movements, we should have to know not only the variations of the price level and of the quantity of money, but also the variations in the quantity of goods and services on offer. Now, as the quantity of goods and services on offer is assessed over a specified period – probably a year – it would have to be compared with the quantity of money destined to be put into circulation in the same period. And if this latter quantity cannot be directly ascertained, the stock of money would have to be multiplied by a coefficient corresponding to its average velocity of circulation.

But the statistics we possess of annual production, which are, moreover, incomplete, only relate to certain countries (United States, Great Britain) and to periods which are very recent. Where the quantity of money is concerned we have estimates of stocks of metallic, fiduciary, and bank money (bank deposits), but only very fragmentary data regarding velocity of circulation.

As far as prices are concerned, all we have is some sporadic information for earlier periods and, from the beginning of the nineteenth century, wholesale price indices which for many years only covered about fifty commodities. It is only for the past few decades that more comprehensive statistics are available, but even for so recent a period as this we are far from possessing indices of prices as a whole.

We have consequently accustomed ourselves simply to comparing the available wholesale price indices with indices of the variations in the stock of money, the latter being regarded for the most part as varying as the metallic element, principally gold.

The very summary data which do enable price movements to be traced are thought to point to the existence, at least from the sixteenth century, of certain long-term periods of fluctuation. From the beginning of the nineteenth century, on the other hand, shorter periods of fluctuation, corresponding to trade 'cycles', are also discernible.

The periods recorded are:

From the beginning of the sixteenth to the middle of the seventeenth century, an upward tendency.

From the middle of the seventeenth to the end of the eighteenth century, a downward tendency.

From the last quarter of the eighteenth to the second decade of the nineteenth century, a new upward trend.[1]

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[1] Where this subject is concerned two recent works may be consulted in the first place, both of which contain references to older works: FR. SIMIAND, *Recherches anciennes et nouvelles sur le Mouvement général des Prix du XVI^e au XIX^e Siècles*, and HENRI HAUSER, *Recherches et Documents sur l'Histoire des Prix en France*. Because of their importance the names of the following early works are also worthy of note: THOROLD ROGERS, *A History of Agriculture and Prices in England from the*

The main price movements of the nineteenth century are usually classified into the following periods:

From 1820 to 1850, a period of declining prices.

From 1851 to 1873, an upward tendency.

From 1874 to 1896, a new period of decline.

From 1897 to the end of the nineteenth century, and even up to 1914, a new upward tendency.

After 1914 monetary disturbances make comparisons of prices registered in different countries or at different times a very delicate matter. Statistics emanating principally from the United States, whose monetary régime remained unchanged until 1933, do, however, give us the following indications:

The rise which occurred at the beginning of the twentieth century continued until the middle of 1920.

From that time the trend continued to be a downward one until 1933, apart from a recovery between 1923 and 1925.

A recovery of prices is recorded after that date. But the policy of managed prices adopted in this period makes it impossible to draw a proper comparison between it and the periods which preceded it.

As regards the range of price variations observed in metallic monetary systems, the accepted reading of the facts is that between the beginning of the sixteenth and the middle of the seventeenth century prices almost trebled, and that after a recession of about 30 per cent in the phase which followed, the new rise at the end of the eighteenth century brought them up to almost four times their original level.

In the nineteenth century, setting aside the first two decades, when prices, notably in England, were influenced by the forced-currency régime, if we take the average level for 1901-10 as 100, we see the index figure start at 160 in 1820 and fall in 1850 to 100 in England and to 110 in France; in 1857 it rose to 140 in England and 160 in France, and remained at a high level until 1873; it declined to 70 in 1895 and rose to 110 and 120 in 1914. The index figure continued to move upward during the war, and rose steeply to 240 in 1920 in the United States, where it receded to 70 in 1933.

These attempts to interpret the movements of prices over the centuries

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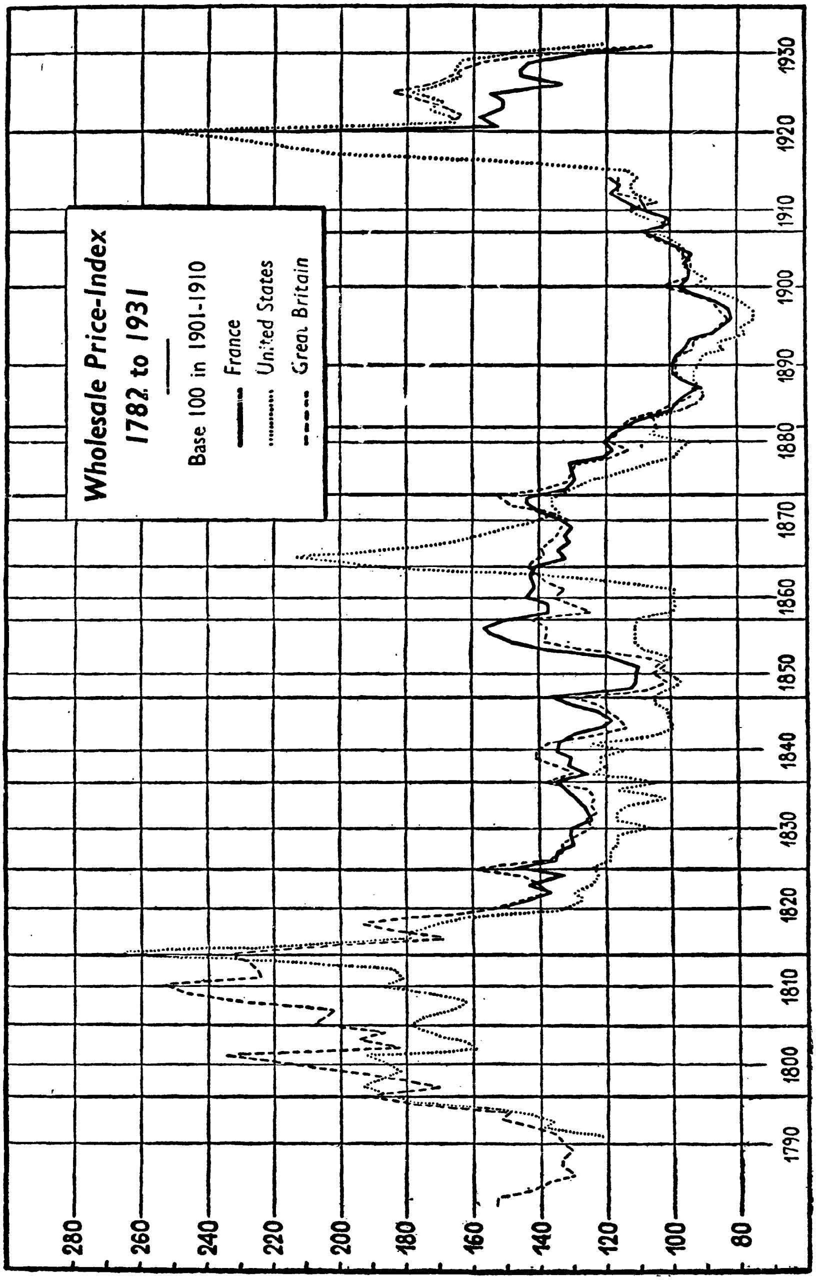
Year after the Oxford Parliament (1259) to the Commencement of the Continental War (1793), 7 volumes; VICOMTE D'AVENEL, *Histoire économique de la Propriété, des Salaires, des Denrées et de tous les Prix en Général, depuis l'An 1200 jusqu'en l'An 1800*, 7 volumes; L'ABBE HANAUER, *Etudes économiques sur l'Alsace ancienne et moderne*; GEORG WIEBE, *Zur Geschichte der Preisrevolution des XVIten und XVIIten Jahrhunderts*. Mention should be made lastly of two recent studies which are more specialized, but particularly recommended: LABROUSSE, *Esquisse du Mouvement des Prix et du Revenu en France, au XVIII^e Siècle*, and PAUL RAVEAU, *Le Pouvoir d'Achat de l'Argent et le Pouvoir d'Achat de la Livre Tournois, en Poitou, du Règne de Louis XI à celui de Louis XIII.*


Wholesale Price-Index
1782 to 1931
Base 100 in 1901-1910
France
United States
Great Britain
280
260
240
220
200
180
160
140
120
100
80
1790
1800
1810
1820
1830
1840
1850
1860
1870
1880
1890
1900
1910
1920
1930

leave out of account the possibility of establishing the relation between production – the index of the exchanges to be effected – and the available monetary stocks – the index of the quantity of money put into circulation – in order to ascertain the concomitance between them. All that is done is to compare the evolution of *prices* with that of the *stock* of money, or simply with that of the stock of *metallic* money. When it is put in this way the problem is *very incorrectly* stated. Certain facts emerge, however, which call for comment:

The *rise in prices* between the beginning of the sixteenth and the middle of the seventeenth century coincided with a very substantial and proportionately larger *increase* in the stocks of precious metal.

The decline which followed it synchronized with a *less rapid increase* in the stocks of metal.

The *rise* in prices at the *end of the eighteenth century*, on the other hand, *did not correspond* to a new increase in the production of the precious metals.

There was therefore *no obvious synchronization* between the rise in prices and the increase in stocks of metal except in the first period. It is customary to stress this and pass over the others in silence.

As we have seen, the nineteenth century is usually divided into four phases of alternately rising and falling prices. As for the variations in the stock of money, it is habitual amongst writers of recent works to take account only of the stock of gold,[1] and in this connexion the following observations are usually advanced:

The first phase (1820-50) – one of falling prices – corresponded to a 'slight increase' in the production of gold.

The second (1851-73), which is considered to be a phase of rising prices, was marked by a huge increase of gold stocks.

The third (1874-96), which was a further period of decline, coincided approximately with a slight slowing down in the pace of gold production (though not of gold and silver combined).

The fourth phase (1897-1914), which was again a period of rising prices, corresponded to a new and powerful acceleration in the pace of gold production – though it is true that this had begun in 1891.

As for the post-1914 period, this was marked up to the middle of 1920 by rising prices, then by a fall, which was practically uninterrupted from 1922 to 1925 and continued until 1932, followed by a recovery. Now, these price movements coincided with a *slowing down* of gold production between 1915 and 1922 and an acceleration in its pace after that date. The progress of gold production did not, therefore, keep step with price movements, to say the least between 1915 and 1920 and from 1926 to 1932.

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[1] Which is incidentally an *anachronism*; the greater part of this period was dominated by bimetallism, and even after bimetallism disappeared silver continued to perform an important monetary function, for down to the end of the nineteenth century, and even later, it continued to be in current use in the Far East.

Even if to simplify the statement of the problem we admit that production progressed at a pace which was practically steady, and that it is sufficient for our purpose to compare the evolution of prices with that of the stock of metal, we see at first glance that the periods when rising prices coincided with increases of stocks of metal are counterbalanced by periods of non-coincidence which are fairly frequent, more frequent, indeed, than the orthodox analysis would lead us to believe.

This is first apparent during the seventeenth and eighteenth centuries. Where the nineteenth century is concerned, though it is true that from 1820 to 1849 the average fall in prices corresponded to a still relatively modest increase in the stock of gold, it is none the less true that the pace of gold production definitely accelerated during this first period.[1] Thus the curve of gold production *rises*, whereas the curve of prices *falls*. It is not the accepted agreement which should be read into these figures, therefore, but disagreement.[2] As for the third phase – 1874-96 – it is true that the fall in prices was matched by a slight falling off of gold production, but *this had already set in, at the same pace, in the preceding decade*, which falls within a period regarded as one of rising prices; and furthermore, though it is true that gold production slackened to some extent, this does not hold good where the *overall production of gold and silver is concerned*. Finally, there was a notable increase in gold production from 1891, whereas prices continued to decline until 1896. It was not until 1897 that the rise in prices and the acceleration of gold production came into step again.

Hence the stress laid on the 1850 period as an illustration of the remarkable synchronization between price movements and the progression of gold stocks.

This interpretation must be strictly qualified, however. For if we do not confine our scrutiny to the curve starting from 1850, which is frequently the only one to be taken into consideration, and look at the curve which starts a few decades earlier, we find that the year 1850 is not situated as it were on a kind of plateau whence prices begin to soar upward, but that it lies on the contrary at the depth of a depression, and that the strong rise on which so much emphasis is laid (about 50 per cent between 1850 and 1856) merely brought prices back to much the same level at which they had been ten years earlier.

[1] The stock of gold increased by 1·4 per cent per annum during the ten years from 1840-50, as against 0·5 per cent in the preceding decade.

[2] It is true that Professor G. Cassel, in a document which has received wide publicity, has produced a cleverly contrived graph which reverses the curve of gold production so as to make it run parallel with that of prices in the last phase of the nineteenth century. (See the Memorandum by this writer in the *Rapport Provisoire de la Délégation de l'Or* (Geneva, 1930), and the criticism of the method adopted, in BERTRAND NOGARO, *La Méthode de l'Economie politique*, p. 168.)

There are some further observations to be made in this connexion:

The rise of prices in this period is clearly revealed in the French and British price indices, but *not in the price index of the United States,* though it was precisely in the United States – in California – that progress in the rate of gold production was most marked, and *a large part of the gold produced was coined on the spot and went to swell America's stocks of metallic money.*

On the other hand, the rise of prices in France did coincide *broadly* with the increase in world gold stocks, but it preceded the influx of gold, which did not make itself felt to any extent until *1853*. The pace of the latter was, moreover, fairly slow until 1857, and it did not really get into full swing until 1859. Now, from that moment, whereas France's stocks of coined gold went on increasing without interruption, the trend of French prices was a *downward* one, and it was only between 1870 and 1873 that they recovered slightly.

These facts make nonsense of the much-stressed agreement between the increase of gold production and price movements in the years which followed 1850.

Furthermore, if instead of confining our attention to the general price index – i.e. the *average* index – we separate it into its elements, our interpretation of the great swing of prices which occurred in 1850 will be a much more pedestrian one, though certainly a much more correct one. This is generally looked on as the starting-point of a 'long-term movement' which tends to be related to the sudden increase in world gold stocks. But the great decline prior to 1850 would seem to have been largely due to the fortuitous coexistence of two separate factors, namely a fall in the price of 'industrial products', i.e. raw materials, in the depression following on the crisis of 1847, and a fall in the price of agricultural products after a series of *good harvests.* The sudden recovery of prices after 1850 also coincided with a simultaneous rise in the prices of raw materials in the *boom period* of the ensuing trade cycle and in the prices of agricultural products. And this huge rise – the price of cereals and animal products doubled, that of potatoes trebled, and that of wine quadrupled – was due principally to a series of *bad harvests*: an *agricultural phenomenon having no connexion with the variations of the stock of money.*

In the following phase, moreover, the long-continued price depression was also largely an expression of the uneasiness of European agriculture in face of strong competition from the new countries;[1] and though from

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[1] Here the money factor comes into the picture, though only in so far as the foreign exchanges are concerned. The depreciation of the Argentine piastre was expressed in a rise in the local currency of the price of the Argentine wheat sold in London for sterling. This was beneficial to Argentine agriculture, which competed with European agriculture on unequal terms.

1897 onward the price curve righted itself, we must not forget that this period was characterized not only by the opening up of the South African gold-mines, but by an increasingly rigorous protectionist policy and by the *development of trusts and cartels.*

In the post-1914 period, it is difficult to attach great importance either to the agreement or non-agreement of price movements on the one hand and variations in gold production on the other. For the ratio between the supply of gold, or more accurately the supply of monetary gold, and monetary stocks as a whole becomes more and more uncertain.[1] As for the coefficient of velocity of circulation which has to be applied to the monetary stock to determine the quantity of money available over a given period, it is still impossible, though a certain amount of progress has been made in this respect,[2] to define it with any sort of precision. But as it certainly varies considerably from one period to another, it is hardly possible to leave it out of our calculations.

We may take it as established, on the other hand, that in *this last period* – particularly between 1929 and 1932 – *the annual volume of goods produced varied considerably more than gold stocks.*

Nor can we be content to ignore the variations in the supply of goods, and to adopt the convenient fiction that its rate of progression was steady. It would appear, on the contrary, to have been above all the *variations in the supply of goods which reacted on prices in this last phase*, at least where agricultural products, which constitute the great bulk of the products offered on world markets, are concerned. For it was these variations more than anything else which modified the ratio between world gold stocks, the presumed index of the total supply of gold, and the quantity of goods, particularly between 1915 and 1929, when price movements corresponded, generally speaking, to the variations of this ratio, in the direction indicated by the law of supply and demand.

All things considered, though the variations in the supply of metallic money, in so far as they can be regarded as an adequate index of the variations of the monetary circulation, do appear capable, all other things being equal, of exerting a decisive action in a given direction on price movements over a given period, we must realize that it is not possible to determine the influence of the money factor so defined with the required precision. It is a still more ticklish matter to measure variations of production in the past. And even if we succeeded in establishing these two elements, we should still have to allow for the many favourable or depressing factors which react in their own separate ways on the various markets, and through them on the general level of prices.

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[1] The creation of fiduciary and bank money during this period became increasingly independent of the supply of gold, of which many countries were almost entirely depleted.

[2] Interesting information on this subject is contained in *Monnaie et Banques*, published annually by the League of Nations Economic Research Service.

We must beware, moreover, of interpreting what are known as general price movements as if prices varied 'all of a piece', and as if the *abstract idea* represented by an average is a *reality*. We must on the contrary separate the indices into their component parts, study *first* the markets for the various products, *tracing the factors on each market which react on the formation of prices*, and then, making due allowance for all contingencies, discover the *links which bind the separate markets together*. If the money factor comes into the picture, it will almost always be found lurking behind our analysis, perhaps underlying an increased demand for raw materials as the result of credit created by the banks. Money most certainly has a part to play in the variations of the exchange ratio between money and goods – movements of prices or changes in the value of money, according to how we look at it – but price movements are the result of *an extremely complex combination of actions and interactions, and – except in the case of great inflation – they cannot be considered as essentially monetary phenomena.*

§4. The problem of stable money. Index money

We have seen that it is not strictly true that money is a variable standard, for it enables us to measure the variations of prices in time. But it would appear to be a bad accumulator of value, because its purchasing power varies continually as time goes on as a result of the movements which occur in prices, no matter what their cause may be.

We have seen, on the other hand, that the claims put forward by certain economists, that the purchasing power of money can be stabilized by an appropriate regulation of its quantity, are based on a rigid conception of the quantity theory, which accords neither with the facts, when these are correctly observed, nor with any valid line of reasoning.

We must therefore abandon the convenient fiction – so convenient that it was for a long time universally accepted – of the stability of the purchasing power of money. It would no doubt be very pleasant to be able to think that today's 1,000 francs has the same purchasing power as the 1,000 francs received yesterday or due to be received tomorrow. In periods when the variations of prices are on a very small scale, we can for practical purposes act as if a fiction of this kind were true. But we cannot do so when the range of price movements is a wider one.

As, however, money, though a bad accumulator of value, is not a bad standard, it is possible in long-term contracts to agree that the sum of money stipulated shall have applied to it a coefficient which will enable the purchasing power which it represents when the contract is made, to be approximately maintained when the contract is fulfilled. This is the legal solution of the problem.

The publication of index numbers which record variations of prices with fairly satisfactory accuracy makes it possible to put this theoretical conception into practice. It may be agreed, for instance, that a sum of money deposited with a bank shall have applied to it a *coefficient corresponding to the ratio of the price index on the day of withdrawal to the price index on the day of deposit.*

We have seen above[1] that this method was given a more general application at the time of the recent Hungarian monetary crisis. The first step in this direction was the creation of money of account with a stable purchasing power.

We have seen, too, how notes eventually came to be issued in *index money.*

Here, then, an attempt was made to find not only a legal, but an economic solution of the problem of money in its function of an accumulator of value. The money itself was, in fact, to be so constituted as to perform this function more efficiently than in the past.

The experiment, which incidentally came about by chance, is an instructive one. For as we have seen, the fiscal pengoe or index pengoe did for several months retain a stable purchasing power, and its first depreciation, which was, moreover, fairly limited in extent, was due to certain contingencies.[2]

But at that time it was only money of account, and its role was, moreover, solely that of an accumulator of value. The other functions of money continued to be performed by the ordinary pengoe. Prices were stipulated in ordinary pengoes, and payments continued to be made in ordinary pengoes.

It was another matter when the fiscal pengoe was issued in the form of notes. The ordinary pengoe was very soon driven out of circulation and the fiscal pengoe, the index currency, had to perform all the functions which devolve on money.

But after that it gradually ceased to be capable of performing its role of accumulator of value effectively. Prices, being now stipulated in index money, could be increased, and though the possession of index pengoes did entitle their holder to have the value of the sum he had kept brought into line with the price index, the money of payment which would have enabled him to benefit from the higher value had disappeared.

To make the experiment complete the value of the index money itself would have had to be automatically adjustable. For it is possible, in theory, to conceive of a note worth, say, 100 units of money at the time of its issue being worth 110 units at a given moment if the price index shows a rise of 10 per cent. But it would be a difficult matter to put the theory into practice.

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[1] Part II, Chap. III, §7.

[2] See above, p. 122 *et seq.*

Furthermore, we must realize that if the adoption of a currency such as this were a practical possibility, it would mean that a sliding-scale system such as is sometimes applied to wages would become general. Now, this system would no doubt have the advantage of solving the problem of the stability of the purchasing power of money automatically and for everyone, or at least of coming very near to doing so. It would eliminate, in principle, claims which tended to raise prices or wages, in so far as these were based on rises in the cost of living. But it would not prevent demands for rises on other grounds. And it should be added that if available purchasing power were increased automatically, it would become much more difficult to resist claims of the latter kind. We can conclude, therefore, that the use of index money, whilst it might counteract certain tendencies towards rising prices, would be conducive to others, and we have no proof that it would be capable of neutralizing the latter entirely.

§5. The theory of exchange

The monetary phenomena which are of greatest interest to economists are largely the outcome of the relations which exist between different monetary systems. Now, these relationships arise out of the payments made by one country to another as a consequence of international exchanges. Hence the study of such phenomena involves that of the machinery of the exchanges, and *the theory of exchange therefore plays a large part in the general theory of money.* This truth is unheeded by orthodox political economists, who have on the contrary always regarded phenomena of currency depreciation – which are for the most part exchange phenomena – as instances, amongst others, of the application of the quantity theory. We have already seen that the interpretation of most contemporary monetary phenomena, hence the whole theory of money, acquires new force when such phenomena are related to the machinery of the exchanges. It only remains now for us to formulate the theory of exchange as it emerges from our knowledge of cambist technique as well as from the many actual instances which have given us an insight into its functioning in widely differing circumstances.

Firstly, our knowledge of the working of the exchanges enables us to lay down certain well-established principles.

We know in the first place that the rate of exchange varies according to the supply of and the demand for bills of exchange or drafts drawn on foreign centres and payable in foreign currencies. We also know that the amount of the drafts offered corresponds to the total of claims outstanding on foreign countries, and that the amount of the drafts 'demanded' corresponds to the total of the debts due for payment to foreign countries at the same moment. In other words, we are entitled to assume that the rate of exchange depends primarily on *the ratio between the surplus or the deficit on exchanges with foreign countries*, or, to put it differently, on *the state of the balance of payments at the given moment.*

Granting this, our next step is to make an *essential distinction* between the hypothesis of *convertible* money – money, that is, which is convertible at a fixed rate into a foreign currency – and that of *inconvertible* money. *Convertibility* at a fixed rate is indeed a necessary prerequisite of a system of *stable* exchanges,[1] and *inconvertibility* is a *necessary prerequisite* of *instability of exchanges*, which is expressed in practice in an exchange loss or an external depreciation of the currency.

In the case of *convertible* money, the exchange rate *oscillates* according as the position of claims and debts on foreign countries shows a surplus demand for or supply of drafts on the exchange market, but only within the *narrow limits* constituted by the convertibility mechanism (gold points or their equivalent).

In the case of *inconvertible* money, the rate of exchange is also affected by the variations of the ratio between debts and claims on foreign countries, *but there is nothing to restrict its fluctuations*,[2] *at least in the direc-*

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[1] The writer of a review of the first French edition of this book published in *Economica* for August 1947, reproaches the author with reducing the theory of the value of money to convertibility – it is sufficient to read §2 of this chapter to realize that this criticism is unfounded – and he adds: 'It follows that he is unable to conceive of a permanently stable inconvertible currency.' To this the writer of the present work replies that if his critic means, as he would seem to mean, convertibility into metal, it is sufficient to read this book more carefully to see that, on the contrary, many passages in it are devoted to the study of the various convertibility devices which function without the agency of gold or silver. But if the contention is that stability of a domestic currency relatively to foreign currencies can be achieved without any convertibility device, the author's reply is, not only that he is unable to conceive of an inconvertible currency having a stable exchange relationship to foreign currencies, but also that he perceives quite clearly why stability cannot be ensured in such a case. The fact is that *this is an exchange problem*, and the fluctuations of the rate of exchange can only be contained within *definite limits* when the conversion of the domestic currency into a foreign currency and vice versa can be secured by means of a regulating device in the event of a surplus or a shortage of drafts on offer on the exchange market.

[2] Certain writers claim to have discovered a limit to the fluctuations of an exchange which has broken away from the gold points, in the purchasing power parity. Their argument runs like this: assuming that at one particular moment prices have doubled in Great Britain and quadrupled in France, which means that the franc has lost twice as much of its purchasing power as the pound, the exchange, assuming it to have been originally 25 francs, must now stand at 50 francs. Now, they say, a Frenchman will have to pay 50 francs for a pound, but he will obtain twice as many goods in England as he could get for 25 francs in France. Conversely, the Englishman will only obtain half as many goods for 25 francs as he could get in England for a pound, but for every pound he receives 50 francs. It follows that transactions can be carried out at the new rate of exchange as in the past. If, on the other hand, the rate were less than 50 francs, the Englishman would be hard put to it to buy in France, and if it were higher, purchases in England would come too expensive to the Frenchman. The result would be, so they conclude, that importers would refuse to buy drafts

tion of a fall in the domestic currency, for it is generally only convertibility *for export* which is suspended.

Here it should be added that when a currency is inconvertible *the ratio between claims and debts tends to alter by the very fact of inconvertibility and the exchange loss which it entails.* For debtors of foreign countries are often quick to buy up the drafts they will be requiring for their foreign payments, for fear of being put to greater expense if they delay. Creditors of foreign countries, on the other hand, are in no hurry to repatriate the proceeds of their transactions, because they prefer to keep the amount represented by their claims in a sound foreign currency as long as they possibly can. It may even happen that foreign bills are bought by investors who have no payments to make to foreign countries, the object being to turn holdings of domestic currency into foreign currency.[1] Hence the balance of payments ceases to be only the expression of ordinary commercial or financial transactions, and also reflects speculative transactions which depress the rate of exchange.

Though it is established that inconvertibility is a necessary antecedent of unsteady exchanges, it may pertinently be inquired whether inconvertibility is not itself the result of other antecedent causes.

An adverse balance of payments when long continued may lead to the exhaustion of a country's means of foreign payments (metallic reserves, foreign bill holdings, etc.) and so *cause its notes to become inconvertible*. In this case it is the primary cause of the exchange loss.

We can go a stage farther back and trace the reason for the deficit on the balance of payments. One of the causes may be *disparity of purchasing power* resulting from an internal *rise in prices*, whereby the latter have become higher than foreign prices having regard to the exchange parities, which has had the effect of stimulating imports and putting a brake on exports and so bringing the balance of payments into disequilibrium.

Inflation[2] may be amongst the possible causes of the rise in internal

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on the other country at a price which would not maintain the purchasing power parity. The chief proponent of this thesis was the Swedish economist Gustav Cassel. It is not watertight, however. Importers do not query the price of drafts on foreign countries. They regard the rate of exchange as a factor to be taken into account in calculating the purchase price of the foreign goods. If the goods are ones which are not produced in the importer's own country – and goods purchased abroad are as a rule not produced, or not produced in sufficient quantities, in the purchaser's own country – he buys them all the same and sells them at a higher price. The most we can say is that if the rate of exchange is such as to make the foreign goods dearer than home-produced articles of a similar kind, this will tend to restrict imports, thereby reducing the demand for foreign drafts and pushing up the rate of exchange. But it is not the purchasing power parity which determines the rate of exchange.

[1] Such was the 'flight from the mark' in 1923.

[2] The rise in internal prices may also be due to other causes, particularly to a social policy which tends to raise wages and increase the value of agricultural products, as was the case in France in 1936.

prices. In this case the inflation, having caused the rise in prices and thereby helped to make the balance of payments adverse and the paper inconvertible, figures as the *initial cause* of the exchange loss.

Here we return by a devious route to the traditional theory, which finds the explanation of all monetary depreciation, external as well as internal, in the quantity theory. But instead of being vague and confused, this interpretation rests on the logical concept of a possible concatenation of facts. On this hypothesis it is always *inconvertibility which is regarded as the immediate starting-point of the exchange loss. But the inconvertibility is associated with inflation.*

This interpretation, needless to say, has been readily accepted by writers who cling to the orthodox theory, and as in a paper-currency system the issues of notes are almost always somewhat excessive in the beginning, they are rather apt to regard the inflation as the primary cause of both the external and the internal depreciation of the currency. This does, moreover, quite often accord with the facts recorded by history: thus, even at the beginning of the depreciation of the German mark abnormally large issues were obviously made to finance the war.

We must not lose sight of the fact, however, that inflation is certainly not a necessary and sufficient antecedent of an exchange loss: as soon as a currency becomes inconvertible its exchange value is liable to decline – this can quite well happen without inflation[1] – beyond the limits corresponding to the gold export point, and this actually takes place as soon as the balance of payments becomes negative. *Conversely, inflation is not followed by an exchange loss so long as the notes continue to be convertible.*[2]

Furthermore, inflation and inconvertibility are often the result of a *combination of measures taken simultaneously* with a view to preventing undesirable repercussions on the financial situation, as when, in times of war, notes are created to meet the requirements of the State and the bank is released from its obligation to convert them, in order that its cash reserve shall not be needlessly depleted.

Finally, it should be observed that *the three factors involved* – inflation, internal depreciation and external depreciation – are linked together by a *complex system of interrelations and mutual reactions.*

Up to this point we have dealt with *inflation* leading to a rise in prices (internal depreciation) and so to *an adverse balance of payments*, whence a suspension of convertibility followed by an exchange loss (external depreciation). But the latter, which necessarily leads to a *rise in the*

[1] As in the case of sterling in 1931.

[2] In France, for instance, exchange stability was maintained after 1936 by the intervention of an exchange stabilization fund, despite undue recourse to advances by the bank.

prices of imported products – and possibly of certain export products as well – may be sufficient to cause internal depreciation.[1]

On the other hand, a *rise in prices* caused by an *exchange loss* may tend to *increase the money in circulation*, both by the creation of fiduciary and bank money and by the increased velocity with which the money is turned over. *The sequence of events is then reversed*: the creation of money *follows* the rise in prices, which itself *follows* the exchange loss. We have seen that this is what took place in the second phase of the depreciation of the mark from 1921 onward.

The theory of exchange aims at doing more than explain how exchanges can be stable or unstable and how the transition from stability to instability, or vice versa, comes about: it also seeks to explain the influences which cause the exchange to *vary*, and to formulate the rules which govern its variations. Where stable exchanges are concerned, where, that is, the fluctuations are kept within narrow limits by a convertibility device, we have seen that these small fluctuations are obviously related to fluctuations in the *balance of payments*. When the exchanges are in disequilibrium, the momentary position of the balance of payments continues to make itself felt, but we have already seen that the balance of payments itself is quickly brought into disequilibrium by the eagerness with which debtors of foreign countries buy up foreign bills and the tardiness of creditors of foreign countries to supply them.

Note issues can, moreover, exert a concrete action on the balance of payments if by creating purchasing power with no counterpart they lead to a rise in internal prices, and a psychological action if by causing the public – rightly or wrongly – to anticipate a future decline in the domestic currency they strengthen the preference for foreign currencies. We must not forget, however, that comparatively recently the Czechoslovakian crown ran parallel with the German mark for two years, during which time note issues were multiplying in Germany, whereas Czechoslovakia was pursuing a rigorous deflationary policy. Hence, we cannot continue to affirm the principle that the internal depreciation of an inconvertible currency necessarily increases with the quantity of money issued, and conversely that it slows down when the quantity of money in circulation is reduced. *The problem is much too complex to fit into so simple a rule as this.*

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[1] It is true, on the other hand, that it *neutralizes the rise in internal prices where sales to foreign countries are concerned, by reducing the price at which the domestic monetary unit can be procured abroad.* We may even say that the exchange loss *more than neutralizes* the rise in internal prices of which it is the cause, for, generally speaking, it does not have a direct effect on all internal prices, and the rise in the price level is consequently proportionately *smaller* than the exchange loss. Whence a possible *spur* to exports combined with a brake on imports, and a consequent tendency towards a *readjustment of the trade balance*, hence of the balance of payments. Thus there was an exceptionally large expansion of exports in France between 1920 and 1927, which must surely have been due partly to the 'cheapness' of the franc to holders of foreign currencies – its cheapness more than compensated for the rise of prices in terms of the paper franc. And the readjustment of the balance of payments which followed could not have been other than conducive to the stabilization of the franc. In Germany in 1923, on the other hand, for the reasons indicated above (p. 105) the depreciation of the mark was at least equal to the rise in internal prices.

In considering exchange fluctuations against a background of inconvertibility, then, we must confine ourselves to recording the factors which may act in either direction, without attempting to measure their action or even to lay down hard and fast rules ill suited to their largely subjective nature.

A further problem which arises in connexion with the theory of exchange when the money is inconvertible and its exchange rate fluctuates is that of the *supposed tendency towards an automatic return of the balance of payments to equilibrium.* We have just seen that an exchange which has depreciated as a result of the suspension of convertibility, sometimes following on an unfavourable balance of payments, may be conducive to a readjustment of the balance of payments, because generally speaking the cheapness of the domestic currency to holders of sound foreign currency more than compensates for the rise of internal prices – in so far as this is attributable to the exchanges.[1] This factor of equilibrium has certainly been operative in quite a number of cases (for instance, in the Argentine Republic before 1900, and in France before 1927); it cannot, however, be regarded as an automatic element of recovery, and we must guard against laying down any dogmatic formula in this respect.[2]

One last problem remains to be solved by the theory of exchange with regard to unstable exchanges of inconvertible currencies, namely that of a *return to stability.*

The traditional theorists, faithful to Ricardo's thesis, had their own solution: the exchange loss being, so we were told, due to 'depreciation' which was itself caused by excessive issues of money, the essential condition for a return to stability of the exchanges – which was only conceived of on a basis of the former parity – was the reabsorption of the surplus money issued. Reference to the explanation of the working of the exchange mechanism given in the first part of this book will suffice to show that a measure of this kind is, to say the least, inadequate. The essential condition of a return to stability is obviously a return to convertibility.

It is true that if the exchange loss has been accompanied – as it generally is – by a rise in prices, there is still one more problem to be solved: that of the *purchasing-power parities*. If stabilization is effected on a basis of the old monetary parities, and if the internal price level thus translated into foreign currencies is substantially higher than the level of foreign prices, this will stimulate imports and place a check on exports, which will tend to bring the trade balance, and with it the balance of payments, into disequilibrium, which in turn will be liable to lead to a fresh suspension of convertibility.

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[1] The exchange loss on the domestic currency is, in fact, so much profit to holders of foreign currencies, whereas it only reacts fully on the prices of imported products, and its effect on the average level of prices is consequently only partial.

[2] See BERTRAND NOGARO, *Cours d'Economie politique*, 4th Ed., Vol. 2, p. 384 *et seq.*

According to the traditional doctrine 'deflation' would then be indicated, that is to say, a reduction in the supply of money with a view to bringing prices down. This has often been attempted, with results, incidentally, somewhat different from those intended. The solution which has been generally adopted since the beginning of the present century, particularly since the great exchange crisis after the 1914-1918 war, is a much more reliable and no less rational one: it consists in *re-establishing convertibility on the basis of a new parity* which takes account of the ratio between internal prices and external prices, which is to say the purchasing-power parity.

As regards the *conversion procedure*, we have seen that many different methods may be employed: convertibility via a metallic currency (the gold exchange standard in its original and exact sense), direct, with the assistance of holdings of foreign currency, convertibility either rigid (exchange offices) or flexible (exchange equalization funds); or convertibility resulting from strict equilibrium between claims and debts (rigid exchange control). All these methods are perfectly rational, and theory can do no more than confirm the principle which underlies them.

The theory is sufficiently clear, however, to entitle us to give the answer to the problem a wider application. It is perfectly possible, in fact, to conceive of a comprehensive system for the regulation of international exchanges on a basis of stable parities, founded on a régime which would embody the following essential features:

The setting up of an *international organization* which would open a *credit for each of the member nations* in a money of account bearing a fixed parity to each of the various national currencies. The balances owed by one country to another after the ordinary exchange settlements, instead of necessitating the passing of gold from one country to another, would entail a transfer from the account of that country to that of the other. The system will work smoothly provided only that the parities of the various currencies have been fixed with due regard to the purchasing-power parities,[1] and that the credit standing to the account of each member is sufficient to meet temporary deficits on its balance of payments.[1]

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[1] It must be noted that we are not admitting here what we disputed above (p. 203), namely that the rate of exchange is determined by the purchasing-power parities, but merely stating that the exchange parity adopted will be much more easily maintained if it has been fixed with due regard to the purchasing-power parities.

No funds, in metal or in any other form, *are necessary*. It will be observed, it is true, that this will mean that the international organization which provides these huge credits has no assets beyond the signatures of the member countries. But nothing more is needed, for the credits granted are in reality opened for one another by the member countries, each of whom undertakes in exchange for the credit received to regard itself as having received payment by virtue of the entry on its account, just as its debts are discharged by the corresponding entries on the accounts of its creditors.

And if we wish to discover the philosophy of the system, these payments made simply by book entries in bank money are not much more artificial than payments in real money, or even in commodity money like gold, which would soon become an incubus if gold ceased to be used as money. The only essential difference is that a person who has received money feels secure, by long tradition and consensus of opinion, in the knowledge that he possesses a definite amount of future purchasing power, whereas an entry on an account opened by an organization of the kind described derives its validity from an explicit agreement which could be denounced by the contracting parties.

§6. Money and production

The traditional theorists, who cannot omit the relations between money and production from their study of credit, ignore this problem when dealing with money. They hold that any stock of money can cope with any volume of transactions, inasmuch as prices are fixed automatically at a level which corresponds to the supply of money available. Thus they reduce the whole problem of the relation between quantity of money and production to one of prices. If production is to be expanded and if, therefore, the aggregate transactions are to be increased, the stock of money being unchanged, they simply say that prices will fall sufficiently to enable the existing stock of money to suffice for all the exchanges. And they do not stop to ask whether, with a constant stock of money, production *can* expand in the normal way.

Now, it is most certainly not impossible for a fall in prices to enable a constant number of monetary units to secure the exchange of an increased quantity of goods and services. An increase in production can, on the other hand, admittedly speed up the velocity with which the money circulates. But we have seen that there are no solid grounds for the concept which regards the price level as necessarily and spontaneously adapting itself to the quantity of money.[1] Moreover, the monetary stock could not be adapted to an expansion in production by means of an alteration in the level of prices without seriously disturbing the economic system. Furthermore, there is nothing to prove that production can always expand without a corresponding increase of the stock of money.

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[1] See BERTRAND NOGARO, *Les grands Problèmes de l'Economie contemporaine*, p. 117 *et seq.*

In his famous theory of markets, J.-B. Say sets aside the money factor to show more clearly that in the last analysis products are exchanged for products, that products provide markets for one another, and that one branch of production cannot expand unless the others do so as well. But in an economy in which the exchanges are made through the intermediary of money it is no less necessary, *if production is to be free to expand, that every producer shall first have opposite him buyers possessed of a definite amount of purchasing power in the shape of money*; and unless we assume an indefinite acceleration of the velocity with which the money circulates as production increases, or an indefinite fall of prices, *it would look as though the corollary of a normal expansion of production is a corresponding increase of the stock of money.*

Increased production,[2] moreover, implies the formation of savings. Saving followed by investment makes possible that special form of division of labour which enables an increasing part of the productive effort to be devoted to the creation of the means of production. And though it is true that saving regarded from this angle is mainly saving in kind, it is none the less true that it is saving in money which generally enables it to materialize.[3] And this consideration can only reinforce our previous conclusions.

What is more, in an individualistic society, in which the means of production have a certain elasticity, is not the creation of new money likely, by releasing new demand and engendering a corresponding supply, to increase production *commensurately with technical possibilities*? And is it not precisely this towards which the creation of money by the banks tends?[4]

There is one complication connected with the intervention of money, however. When J.-B. Say expounds his theory of markets, he shows that production can increase without its equilibrium being upset, providing that the products offered by one market enable the products offered by others to be purchased. But the money for which the products sold are exchanged in the first place may not be put back into circulation at once, and even when only a small part of it is hoarded for a very short time, this will mean that the goods for which the money was exchanged *will not at once open up a corresponding market for the other goods.*

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[1] See above, p. 160. See also J. W. ANGELL, *The Behaviour of Money.*

[2] In this matter John Law does not seem to have been far wrong when he wrote: 'To be powerful and wealthy compared with other nations, we should have cash in the same proportion; for without cash even the wisest laws cannot provide individuals with employment or extend manufactures and trade' (*Considérations sur le Commerce et sur l'Argent, Daire ed.*, p. 505).

[3] See BERTRAND NOGARO, *Principes de Théorie economique*, p. 88, or *Cours d'Economie politique*, 4th Ed., Vol. 1, p. 43.

[4] This problem, which the classical doctrine has been pleased to ignore, was not only stated but solved both theoretically and practically by Law, but with an audacity which was so disconcerting as to leave his contemporaries plenty of loophole for the retort that to create money is not to create wealth.

Newly created money, on the other hand, represents a demand which does not result from a supply of goods. This is true even in the case of commodity money, if the latter comes on to the market as money and not as a commodity. It is still more evident when it is non-commodity money; for money created in this way is the visible sign of the springing up of *new demand which has no immediate counterpart in supply.*

The classical theorists claim that this problem can be ignored. If we are to believe them, there will simply be a change in the exchange ratio between money and goods, and the exchange ratios between the goods themselves will remain unaltered. But we have seen that we cannot content ourselves with this oversimplified interpretation of what takes place. There are not really two separate kinds of exchange ratios, one between the various commodities and the other between the commodities on the one hand and money on the other. When a supply of new money is introduced into the economy it is distributed over different markets, which are not all equally sensitive to the action of supply and demand: hence there must inevitably be changes in the ratios. Some part of the money, moreover, reaches the money market, where its inflow, far from creating the rise, tends to lower the rate of interest and so to bring down costs, whilst it conduces to an expansion of production. *It is therefore not the equilibrium of prices alone which is involved, but that of production as well:* the latter is affected in the first place by the advent of a demand unaccompanied by a corresponding supply, and it will perhaps be swayed later on in the opposite direction by the development of production.[1]

We dimly perceive at this point that it may well be that the creation of money by the banks is not entirely unconnected with these alternating booms and depressions which characterize the evolution of production in a capitalist economy. For there are periods of prosperity when the banks, handing out credit with a generous hand, put into circulation new purchasing power which goes mainly into the purchase of the means of production, thus forcing up the prices of raw materials and the rate of interest and wages, and leading to a more or less general rise in prices. These boom periods generally end in a banking or exchange casualty, whereupon the rush for new business yields to an anxiety psychosis. There is then a contraction of credit, the purchasing power created by the banks is reabsorbed, and the tightness of credit repercusses from the enterprises directly affected by it on to the others, thus bringing about a general depression.

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[1] Furthermore, when new money is created not for individual needs but for account of the State, the latter not only acquires fresh purchasing power over and above that already possessed by the public, but by its demand it influences production in the direction best suited to its requirements. Whence the necessity to base our search for equilibrium of production on new premises.

The existence of these cycles of production, which have a fairly close connexion with the credit structure, explain the spate of literature that has been poured out to provide a monetary explanation of economic crises.[1] The truth is that the credit structure, with all the speculation, particularly in exchange, which attaches to it, is a complex matter, and even when the credit expands or restricts the monetary circulation, we cannot ascribe to money alone an evolutionary process which results from the combined action of a multiplicity of factors. But we must remember that *in an individualist economy, where the initiative for production lies with private enterprise, there is a close connexion between the putting of money into circulation and the development of production, and that the creation of money, by calling up fresh demand, can stimulate and orientate the course of production, not without creating temporary disequilibrium.*

§7. Essential conditions for a rational monetary system

The traditional theory considers a normal monetary régime to be one which is based on metal, more specifically a monometallist one. As we have seen, the adoption of a monetary unit defined for all time by a definite weight of fine metal ensures constant parities between all the countries using that metal; and if the metal is selected in all the countries for free coinage – with its corollary of free export and import – they share the same monetary standard. So the adoption of a system of this kind reconciles the existence of national monetary systems with the necessity for effecting international payments, because it enables the latter to be carried out on the basis of a common currency, which is really a metal standard measured by weight.

We have seen in the course of this book that bimetallism, when interpreted in the light of a theory other than the one which inspired its promoters, appears to be equally workable; for the difficulties encountered by the countries which adopted it were due to the fact that they were placed between gold-monometallist and silver-monometallist countries. It is only logical to admit, therefore, that bimetallism can be a sound monetary system, on condition that it is universally – or very generally – adopted, and provided all the countries concerned agree to receive all the silver they are offered without restriction – although silver is nowadays often produced in abundant quantities as a by-product of other metals.

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[1] See BERTRAND NOGARO, *Cours d'Economie politique*, 4th Ed., Vol. 1, p. 443.

A monetary system based on metallic money made of one, or more, of the metals which are accepted for free coinage, would not, however, appear to be an entirely rational one, because in this case the evolution of the stock of money does not correspond strictly to that of production. There is, of course, a certain agreement between the progress of production in general and the development of the production of the precious metals, but the latter is still dependent on the existence or non-existence of deposits and the hazards of prospecting. And though it is true that in these circumstances money cannot be created at the will of the State or of private interests, the fact remains that the evolution of the stock of money is affected by fortuitous events and does not keep in step with production itself.

Since the beginning of the contemporary period, stocks of metallic money have, it is true, been supplemented by fiduciary and bank money, and such money, when not issued for the requirements of the State, which are often extra-economic ones, is created to meet requirements which arise out of private transactions; that is to say, from the movements of the exchanges occasioned by those of production. But bank money must be convertible into fiduciary money in so far as internal payments demand real money, and in principle fiduciary money must be convertible into metallic money, at least when it is to cater for international payments. If the convertibility machinery functions properly, the total stock of money is regarded under the traditional theory as varying as the stock of metal: which means that it is not entirely unaffected by the strictures referred to.

In so far, however, as the creation of non-metallic money does elude the arbitrary clutch of nature and chance, its creation may be said, even when it is kept within bounds, to introduce a new element of arbitrariness, human arbitrariness. The credit transactions from which fiduciary and bank money spring are certainly called into being at the request of heads of enterprises as their production develops. But we saw in the preceding paragraph that the synchronization between the development of production and that of the monetary circulation, even when it is adjusted in this way, is not complete. Now, a rational monetary system is one in which the evolution of the monetary circulation keeps step as nearly as possible with that of production.

This condition would, moreover, appear to be capable of fulfilment, or at least as nearly so as it is in a system based on metal, in a system in which paper money has taken the place of real metallic money, and in which the creation of fiduciary and bank money is subsequently suited to the requirements of current transactions. We decided, in fact, in the earlier chapters of this book, that though money is originally a commodity, at a certain stage in its evolution it can very well cease to be one; and we also found that a system of non-metallic money can function satisfactorily. A non-metallic system is, however, essentially domestic in character, and if it is to function properly it is not sufficient for the stock of money to expand or contract with production itself; it must also be linked up with the other domestic monetary systems by stable parities. Which presupposes an adequate convertibility device. We saw above that the convertibility mechanism may assume different forms, and that in its most perfect form it would include an international credit and transfer organization on the lines of the one just outlined.

It is possible, then, to conceive of the existence not only of rational monetary systems having absolutely no metallic basis, but of a world-wide monetary régime embracing non-metallic national currency systems linked up with one another through an international organization of the kind described at the end of the preceding chapter.[1]

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[1] The present author's major economic activities of the past forty years have been concerned with money, and this book is mainly the product of his own research and his own reflections: it is a synthesis of his previous works. We will therefore confine ourselves to referring the reader to the works of reference mentioned in the author's previous book *La Monnaie et les Phénomènes monétaires contemporains*, and to LOUIS BAUDIN's remarkably well-documented book *La Monnaie et la Formation des Prix*, the appendix to which includes a comprehensive bibliography.

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